

COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

**Investigation by the Department of Telecommunications)
and Energy on its own motion pursuant to Chapter 123)
of the Acts of 2006, § 115, to establish the maximum rates) Docket No. 06-70
and fees to be charged by the Massachusetts Turnpike)
Authority to wireless providers for the placement and use of)
Wireless attachments in the central artery tunnels.)**

DIRECT TESTIMONY OF PAUL B. VASINGTON

EXHIBIT JC-PBV-1

On Behalf of Verizon Wireless

With the Concurrence of the Joint Carriers:

New Cingular Wireless PCS, LLC
Sprint Spectrum L.P. and Nextel Communications of the Mid-Atlantic, Inc.
Bell Atlantic Mobile of Massachusetts Corporation, Ltd. d/b/a Verizon Wireless

October 2, 2006

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D.T.E. 06-70

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND POSITION WITH VERIZON.

A. My name is Paul B. Vasington. I am a Director-State Public Policy for Verizon. My business address is 185 Franklin Street, Boston, Massachusetts 02110.

Q. WHAT IS YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND?

A. I have a Bachelor of Arts in Political Science from Boston College and a Masters in Public Policy from the Kennedy School of Government, Harvard University. I have been employed by Verizon since February 2005. From September 2003 to February 2005, I was a Vice President at Analysis Group, Inc. Prior to that, I was Chairman of the Massachusetts Department of Telecommunications and Energy ("Department") from May 2002 to August 2003, and was a Commissioner at the Department from March 1998 to May 2002. Prior to my term as a Commissioner, I was a Senior Analyst at National Economic Research Associates, Inc. from August 1996 to March 1998. Prior to that, I was in the Telecommunications Division of the Department (then called the Department

1 of Public Utilities); first as a staff analyst from May 1991 to December 1992, then as
2 division director from December 1992 to July 1996.

3 **Q. ON WHOSE BEHALF ARE YOU TESTIFYING?**

4 A. I am presenting testimony for Bell Atlantic Mobile of Massachusetts Corporation, Ltd.
5 d/b/a Verizon Wireless (“Verizon Wireless”), a majority-owned subsidiary of Verizon.
6 Although my testimony is submitted on behalf of Verizon Wireless, the Joint Carriers¹
7 have reviewed this testimony and concur in my conclusions. Where I present alternative
8 proposals for setting rates and fees, those alternatives should be considered as being
9 concurred in by the Joint Carriers as well.

10 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

11 A. On September 13, 2006, the Massachusetts Turnpike Authority (“MTA”) submitted a
12 proposal to the Department of Telecommunications and Energy (“Department”) relating
13 to the installation, construction and operation and maintenance of a carrier-neutral shared
14 antenna wireless telephone communications system (the “System”) in the Central
15 Artery/Tunnel Project (“CA/T Wireless Project”). My testimony is organized as follows:
16 (1) Section II provides an overview of the steps taken to date by the MTA to complete its
17 CA/T Wireless Project; (2) Section III discusses the ratesetting standard encompassed in
18 the recently enacted Section 115, which is the basis of the Department’s authority in this
19 proceeding; (3) Section IV provides a description of the MTA’s proposal; (4) Section V

¹ The Joint Carriers include Verizon Wireless, New Cingular Wireless PCS, LLC (“Cingular”), and Sprint Spectrum L.P. and Nextel Communications of the Mid-Atlantic, Inc. (“Sprint-Nextel”).

1 describes how the MTA's proposed costs include items not related to the MTA's cost to
2 construct, operate and maintain the CA/T Wireless System; (5) Section VI describes how
3 the costs in the MTA's proposal are unreasonable and are calculated using incorrect and
4 inconsistent cost standards; (6) Section VII discusses the reasonableness of System costs;
5 and (7) Section VIII provides a summary and conclusions, with the Joint Carriers'
6 proposal and alternatives.

7 **Q. WHAT MATERIALS HAVE YOU REVIEWED IN PREPARATION OF YOUR**
8 **TESTIMONY?**

9 A. To prepare my testimony, I reviewed the entirety of the MTA's September 13th filing,
10 including the Proposal and Exhibit A (Description of Useable Space), Exhibit B-1
11 (Tunnel Raceway Replacement Cost Estimate), Exhibit B-2 (Additional Costs of System
12 Construction) and Exhibit C (Description of System). Although not identified by the
13 MTA in its filing, Exhibit C presents *an excerpted portion* of the Request for Proposal
14 ("RFP") response submitted to the MTA on September 12, 2002, by its "Selected
15 Vendor," which is Maverick Construction Corporation partnering with Mikom, an Allen
16 Telecom Company (hereinafter referred to as "Maverick/Mikom").² As set forth by the
17 MTA in its Vendor and Carrier RFPs³, the MTA selected Maverick/Mikom to construct
18 and maintain a carrier-neutral shared antenna wireless telephone communications system
19 (the "System") for the CA/T Wireless Project. Installation of the System was to occur

² MTA Proposal, at 3.

³ The Vendor and Carrier RFPs are referenced in the MTA's Proposal, at 3.

1 within three phases, which are the Seaport Access Roadway (Phase 1), the Northbound
2 Artery (Phase 2) and the South Bound Artery (Phase 3).⁴

3 In addition to the MTA's Proposal and related exhibits, I reviewed the Vendor and
4 Carrier RFPs issued by the MTA on July 10, 2002 and January 30, 2003, respectively.
5 These documents are provided herewith as Exhibit JC-PBV-2 (Vendor RFP) and Exhibit
6 JC-PBV-3 (Carrier RFP).

7 **Q. WAS THE INFORMATION AVAILABLE FOR YOUR REVIEW SUFFICIENT**
8 **TO FULLY ADDRESS THE ISSUES BEFORE THE DEPARTMENT IN THIS**
9 **PROCEEDING?**

10 A. No. At this time, the MTA has not provided sufficient information or documentation for
11 me to render an opinion to fully address the issues before the Department in this
12 proceeding. The MTA's initial filing provided very limited, unsupported, summary
13 information and its responses to discovery were not timely filed, and, therefore, were not
14 available at the time of this writing. Moreover, critical supporting documentation
15 relating to the (1) costs associated with the Maverick/Mikom proposal for the
16 construction, operation and maintenance of the System, and (2) costs associated with the
17 MTA's Proposal for tunnel access, are not yet available. Until the MTA submits this
18 supporting documentation, I am unable to complete my review of the cost components of
19 the MTA's CA/T Wireless Project.

⁴ Vendor RFP, at 1; Carrier RFP, at 1.

1 Therefore, while I was able to make some preliminary assessments of the MTA's
2 Proposal as submitted to the Department on September 13, 2006, I would like to reserve
3 the right to supplement or modify this testimony as necessary to reflect more complete
4 information when it is received.

5 **II. OVERVIEW**

6 **Q. WOULD YOU PLEASE PPROVIDE SOME BACKGROUND ON THE MTA'S**
7 **ACTIONS TO EFFECTUATE A WIRELESS COMMUNICATIONS SYSTEM IN**
8 **THE CA/T?**

9 A. According to the MTA, it began efforts on what it refers to as the "CA/T Wireless
10 Project" in May 2001. On July 10, 2002, the MTA issued a request for proposals
11 ("RFP") to vendors who wished to construct the neutral host system (the "System").⁵ As
12 noted above, the Vendor RFP is provided herewith as Exhibit JC-PBV-2. The Vendor
13 RFP set forth "System Requirements" including performance criteria and a suggested
14 system design.⁶ The Vendor RFP described the three phases of the C/AT Wireless
15 Project as Phase I - Seaport Access Road; Phase II - Northbound Artery; and Phase III:
16 Southbound Artery.⁷

17 In the January 2003 timeframe, the MTA selected Maverick/Mikom to construct the
18 System, and then issued a separate RFP to wireless carriers on January 30, 2003 to "seek
19 submissions from Carriers that wish to use the [neutral host] System to provide wireless

⁵ MTA Proposal, at 3.

⁶ Vendor RFP, at 4-9.

⁷ Vendor RFP, at 1 and Appendix A. See also, Carrier RFP, at 1 and Appendix A.

1 telephone service.”⁸ As noted above, the Carrier RFP is provided herewith as Exhibit
2 JC-PBV-3.

3 **Q. WHAT WAS IN THE CARRIER RFP?**

4 A. The Carrier RFP was not designed to solicit “competitive bids or proposals,” as an RFP
5 normally would be designed.⁹ Instead, the Carrier RFP set out the details on four issues,
6 which were (1) a description of the CA/T Project facilities; (2) the Carrier “submission
7 requirements;” (3) the details of the System to be installed by the Selected Vendor
8 (Maverick/Mikom); and (4) the agreements to be executed by the Carrier in order to
9 operate within the System.¹⁰ In terms of the last issue, i.e., the agreements to be executed
10 between the Carriers and the MTA, the RFP stated the following:

11 More specifically, each Carrier will be required to enter into a direct lease
12 agreement with the Authority to rent space in the System and an agreement with
13 the vendor under which the vendor will provide system maintenance and repair
14 for a fee payable to the vendor. Pursuant to these carrier lease agreements, the
15 initial costs of the system construction and installation will be funded by Carrier
16 pre-payments to an account to be controlled by the Authority.¹¹

17
18 The RFP specifically provided that “Authority reserves the right to negotiate any and all
19 aspects of the Carrier Lease Agreements and Vendor Maintenance Agreements”¹²

20 Thus, the Carrier RFP circumscribed two areas of financial responsibility for the
21 Carriers: (1) the cost of accessing the MTA’s facilities for the CA/T Wireless Project;
22 and (2) the cost of the installation, construction, operation and maintenance of the System

⁸ Carrier RFP, at 1.

⁹ Carrier RFP (Cover Letter).

¹⁰ Carrier RFP (Cover Letter).

¹¹ Carrier RFP (Cover Letter).

1 as designed by the MTA and Maverick/Mikom. Pursuant to the Carrier RFP, “access” to
2 the CA/T Project would require payments for rent and other items directly to the MTA,
3 while the costs of the System would be (1) with respect to installation, paid up-front by
4 the Carriers, and (2) with respect to operation and maintenance costs, paid directly to the
5 neutral host vendor. I will discuss later how the “access” and System costs are treated by
6 the MTA in its Proposal, as well as how the Department should evaluate these purported
7 costs.

8 **Q. DID THE CARRIER RFP INCLUDE AN ACCOUNTING FOR, OR COST**
9 **ESTIMATE OF, THE ACCESS AND SYSTEM COSTS?**

10 A. In part. The MTA noted in its Proposal that “[t]he Carrier RFP provided that each
11 Carrier interested in operating within the System would pay to the MTA its share of
12 System installation costs [estimated at \$10 million in the MTA Proposal], base rent and
13 additional use based rent.” The \$10 million System installation costs include all of the
14 construction costs related to the readying of the CA/T Project infrastructure for a wireless
15 system, as well the costs of the Maverick/Mikom equipment to be used in the System.¹²
16 According to the MTA, the proposed base rent was \$7.92 per linear foot, escalated
17 annually by the change in the Consumer Price Index. Though not mentioned in the
18 MTA’s filing, there were other proposed fees and charges estimated or referenced in the
19 Carrier RFP and other documents.

¹² Carrier RFP, at 12.

¹³ The MTA also has estimated that the System may require “Future Capital Upgrades” of \$1,830,000 in years 3 and 8.

1 **Q. WHAT OTHER FEES AND CHARGES WERE INCLUDED IN THE CARRIER**
2 **RFP, APART FROM THOSE ALSO IDENTIFIED IN THE MTA’S PROPOSAL**
3 **IN THIS CASE?**

4 A. The Carrier RFP required a “Fee Deposit” of \$100,000 from each carrier, due with its
5 submission of a response to the Carrier RFP. This Fee Deposit was “to be applied by the
6 MTA against any and all out-of-pocket costs and expenses incurred by the MTA in
7 connection with the preparation of the Carrier RFP and the execution of the Carrier Lease
8 Agreement and Vendor Maintenance Agreements”¹⁴ The Carrier RFP also provided
9 for a so-called “Fully Earned Payment” of \$500,000, shared proportionately among the
10 participating carriers “upon the execution and delivery of the Carrier Lease Agreements
11 by the Carriers”¹⁵ According to the Carrier RFP, “[t]he Fully Earned Payment shall
12 be a one-time only payment that shall be deemed fully earned by the Authority and non-
13 refundable”¹⁶

14 **Q. DID THE CARRIER RFP INCLUDE OR ESTIMATE OPERATIONS AND**
15 **MAINTENANCE COSTS FOR THE SYSTEM?**

16 A. The Carrier RFP stated that “Carriers shall pay all costs of System maintenance and
17 management directly to the Selected Vendor [i.e., Maverick/Mikom], in addition to a
18 stated fee for operation and maintenance of the System” The “stated fee” was set at
19 10 percent of the vendor’s annual system maintenance and repair costs.¹⁷ The original

¹⁴ Carrier RFP, at 12. It is not clear whether the MTA’s outside consultant costs included in its current proposal to the Department include the expenses incurred by the MTA to prepare the Carrier RFP. If the consultant costs were incurred to prepare the RFP, then the previously paid fee deposits should be credited against the MTA’s cost recovery in this case.

¹⁵ Carrier RFP, at 4.

¹⁶ Carrier RFP, at 4.

¹⁷ Carrier RFP, at 4, Addendum 1, at 6.

Carrier RFP did not include any estimate for maintenance and repair costs, but the MTA supplied such an estimate in “Addendum 1” to the Carrier RFP (Addendum 1 is provided herewith as Exhibit JC-PBV-4).¹⁸ In Addendum 1, the annual maintenance and repair costs are estimated to increase from \$1,004,700 in year one, to \$1,310,500 in year ten.¹⁹

Q. PLEASE SUMMARIZE THE COSTS CONTAINED IN THE CARRIER RFP FOR THE SYSTEM, WHICH INCLUDES THE SEAPORT ACCESS ROAD, THE NORTHBOUND ARTERY AND THE SOUTHBOUND ARTERY?

A. In total, the requirements set forth by the MTA in the Carrier RFP would impose the following costs on participating carriers:

- (1) \$484,347 annually in rent per carrier with annual CPI increases (2.5% - 5%);
- (2) \$500,000 for the “Fully Earned Payment,” divided among the carriers;
- (3) \$100,000 “Fee Deposit” per participating carrier;
- (4) \$10,080,732 for construction of the System, divided among the participating carriers;²⁰ and
- (5) annual operations and maintenance charges ranging from \$1,004,700 in year one, to \$1,310,500 in year ten.

Q. WHAT HAPPENED AFTER THE MTA ISSUED THE CARRIER RFP?

A. According to the MTA, certain carriers submitted responses to the Carrier RFP, and the MTA met with each of these carriers “to discuss its proposal and to address any areas of

¹⁸ Addendum 1 is dated February 28, 2003.

¹⁹ Addendum 1, at Exhibit A. The figures in my testimony include the estimate of “Total Maintenance and Repair Costs,” the 10 percent fee, and the “Total Utility Costs.”

²⁰ This cost does not include unknown costs for police details related to traffic control during construction.

1 concern to the Carriers respecting the System.”²¹ The MTA represents that it had
2 multiple meetings and discussions with each carrier from 2004 through 2006 “in order to
3 negotiate agreements for Carrier participation in the CA/T Wireless Project.”²² The
4 MTA claims that it “had reached agreements in principle with three of the Carriers at a
5 negotiated rate and was in the process of negotiating definitive agreements with such
6 Carriers when the Legislation was adopted.”²³ As I am not privy to prior negotiations
7 between the MTA and the Carriers, I cannot verify the MTA’s statement in this regard.

8 **III. THE RATESETTING STANDARD ENCOMPASSED IN SECTION 115**

9 **Q. PLEASE DESCRIBE THE RECENT LEGISLATION ON WIRELESS**
10 **ATTACHMENTS IN THE CA/T PROJECT.**

11 A. In June of this year, the General Court passed Section 115, which provides that:

12 Where it has been determined by the general court that an effective and seamless
13 state-of-the-art wireless communications system in the Central Artery tunnels
14 owned or controlled by the authority provides economic benefits to and ensures
15 the safety of citizens of the commonwealth, consistent with its authority pursuant
16 to section 4 of chapter 81A of the General Laws, the authority shall ensure that a
17 wireless communications system is established in the tunnels of the central artery
18 no later than December 31, 2006

19
20 In order to effectuate the provision of wireless communications services in the
21 tunnels of the central artery, the department shall have the authority to establish
22 rates and fees and shall open a proceeding to establish the maximum rates and
23 fees which can be charged by the authority to wireless providers for the
24 placement and use of wireless attachments in the central artery tunnels. The
25 department shall determine just and reasonable maximum rates and fees for the
26 placement of wireless attachments and use of space in the tunnels of the central
27 artery by wireless providers by assuring that the authority’s recovery does not

²¹ MTA Proposal, at 4.

²² MTA Proposal, at 4.

²³ MTA Proposal, at 4.

1 exceed the cost to the authority of construction, operations and maintenance of
2 the wireless communications system in the tunnels of the central artery. In
3 establishing these rates and fees, the department shall compute the percentage of
4 usable space in the tunnels of the central artery which has been or will be
5 allocated to wireless attachments, and shall consider the number of wireless
6 providers that will be participating in the wireless communications system to be
7 established in the tunnels.

8 This legislation grants the Department authority over rates and fees to be charged to the
9 Carriers for wireless service attachments (“wireless attachments”) in the CA/T Project,
10 similar in certain respects to the Department’s broad pre-existing authority to regulate the
11 rates, terms, and conditions of pole and conduit attachments (“pole attachments”) by
12 power and telecommunications companies, which is provided in M.G.L. c. 166, §25A.
13 However, although the statutory framework for the Department’s regulation of pole and
14 conduit attachments is intended to achieve policy goals similar to this new legislation on
15 wireless attachments, the new and existing ratesetting standards differ in some important
16 respects, which are key to this proceeding, as discussed below.

17 **Q. BEFORE WE GET TO THE DIFFERENCES BETWEEN THE STATUTORY**
18 **RATESETTING REQUIREMENTS, PLEASE EXPLAIN HOW THE POLICY**
19 **GOALS FOR WIRELESS ATTACHMENTS AND POLE ATTACHMENTS ARE**
20 **SIMILAR?**

21 A. The provision of certain services requires access to facilities owned and controlled by
22 one entity. In the case of cable television, cable companies must have access to the pre-
23 existing poles and conduits owned and controlled either solely or jointly by power
24 companies and incumbent telecommunications companies. In the case of the CA/T
25 Wireless Project, wireless service providers must have access for attachments within the

1 tunnels in space that is owned and controlled by the MTA. Because the cable and
2 wireless companies do not have realistic access to alternative carrying plant or
3 attachment facilities, they are captive to the demands of the facility owners, like the
4 MTA, if they want to provide service to their customers. Where the legislature has
5 determined that it is a policy goal for certain services to be delivered economically to as
6 many customers as possible—as it has been for cable television in the past, and for
7 wireless service in the CA/T Project most recently—it is necessary for the legislature to
8 ensure that the rates for wireless attachments are just and reasonable. For both pole
9 attachments and for wireless attachments in the CA/T Project, the legislature has
10 determined that the Department shall ensure just and reasonable attachment rates by
11 establishing those rates in relation to the underlying costs of the facility owners. In this
12 way, the facility owners are not able to extract fees and charges that are in excess of their
13 reasonable costs, i.e., they cannot recover monopoly rents in their attachment fees.

14 **Q. WHAT ARE THE DIFFERENCES BETWEEN THE STATUTORY**
15 **RATESETTING REQUIREMENTS FOR POLE ATTACHMENTS AND THE**
16 **REQUIREMENTS FOR WIRELESS ATTACHMENTS IN THE CA/T PROJECT?**

17 A. The key difference is found in the formulation of the legislature's standard for rate
18 setting. For pole attachments, the legislature has directed that the Department may set
19 rates anywhere between a floor of incremental cost and a ceiling of fully-allocated cost.
20 For wireless attachments in the CA/T Project, however, the legislature has expressly

1 directed that the maximum rate cannot exceed the direct cost of the wireless attachment
2 service.²⁴

3 **Q. WHY DO YOU SAY THAT THE REQUIREMENTS FOR WIRELESS**
4 **ATTACHMENT RATE SETTING ARE DIFFERENT THAN THOSE FOR POLE**
5 **ATTACHMENTS?**

6 A. In M.G.L. c. 166, §25A, regarding pole attachments, the statute provides that the pole
7 attachment rate shall assure “recovery of **not less than** the additional costs of making
8 provision for attachments **nor more than** the proportional capital and operating expenses
9 of the utility attributable to that portion of the pole, duct, or conduit occupied by the
10 attachment” (emphasis added). The Department has correctly interpreted this directive to
11 mean, “the Department has the authority to determine a reasonable rate ... such that the
12 rate is not less than the marginal [or incremental] cost nor more than the fully allocated
13 cost [FAC].”²⁵

14 In contrast, to achieve an immediate, “effective and seamless state-of-the-art wireless
15 communications system in the Central Artery tunnels,” Section 115 provides that the
16 Department shall assure “that the authority’s wireless attachment recovery does not
17 exceed **the cost to the authority of construction, operations and maintenance of the**

²⁴ The legislature’s rate-setting approach in Section 115 is expressly stated in the statutory language. The approach also makes sense. Wireless attachments and pole attachments are different. In enacting Section 115, the state legislature is calling for the construction of an “effective and seamless state-of-the-art wireless communications system.” This is consistent with federal goals to encourage a seamless national wireless communications system and the rapid deployment of new technologies through competition, including improving and enhancing public safety and homeland security as embodied in the Telecommunications Act of 1996, 110 Stat. 56, and related federal amendments. The legislature’s approach in Section 115 furthers that goal.

²⁵ Greater Media, D.P.U. 91-218 (1992), at 32.

1 **wireless communications system in the tunnels of the central artery.”** Thus, the
2 MTA’s fees and charges are limited to the recovery of costs related to, or incremental to,
3 the provision of the wireless communications system. In other words, recovery is limited
4 to the difference between the MTA’s costs without the provision of the wireless system
5 and the MTA’s costs with the provision of the wireless system. The MTA may not
6 allocate costs that it has already incurred or would incur in the future, regardless of the
7 existence of the wireless system, such as overhead and any costs related to the operation
8 of the tunnel for its intended purpose as a roadway. Any costs that are not “construction,
9 operations and maintenance” costs related solely to the provision of the wireless system
10 are expressly prohibited for recovery in rates and fees for wireless attachments.

11 If the legislature intended for the MTA to recover a proportional share of its tunnel and
12 building investments, as the MTA’s proposal would do, it would have used the statutory
13 language authorizing FAC in the pole attachment statute. The legislature may have
14 recognized that an FAC methodology would create a serious disincentive for wireless
15 carriers to locate attachments in the tunnels, thereby defeating the policy goals of the
16 statute. In fact, the legislature did not import the “not less than ... nor more than” pricing
17 methodology from the pole attachment statute, although the legislature expressly did
18 import the definition of usable space almost verbatim from the attachment statute, which
19 indicates that the legislature’s statutory construction was deliberate. It could have done
20 the same for pricing if it intended to allow the wireless attachment rates and fees to

1 exceed the direct costs to the MTA of providing a wireless attachment system.
2 Significantly, it did not do so.

3 The burden is on the MTA in this case to establish a direct link between the construction,
4 operations and maintenance costs that it seeks to recover and the wireless attachment
5 system. As I will discuss in detail later, the MTA has not met that burden with respect to
6 most of the costs it seeks to recover.

7 **Q. DO THE WIRELESS ATTACHMENT STATUTES ALLOW THE**
8 **DEPARTMENT TO DETERMINE THE REASONABLENESS OF REPORTED**
9 **COSTS?**

10 A. Yes. Please note that in the cases where the Department set pole attachment rates
11 pursuant to Chapter 166, there was no need for the Department also to determine the
12 reasonableness of the costs since those costs already were evaluated pursuant to the
13 Department's established ratesetting system. However, this is clearly not the case for
14 rates to be charged by the MTA, so it is incumbent on the Department in this case not
15 only to assure that the MTA is not recovering costs that it is not entitled to under Section
16 115, but also to assure that the level of permissible costs is reasonable.

17 **Q. PLEASE SUMMARIZE THE POLICY ISSUES AND APPROPRIATE**
18 **FRAMEWORK FOR THIS CASE.**

19 A. The task for the Department in this case is to "effectuate the provision of wireless
20 communications services in the tunnels of the central artery" by ensuring that the MTA's
21 attachment fees and charges do not exceed the reasonable, incremental costs to the MTA
22 of providing for wireless attachments. As will be discussed, the Department must ensure

1 that its findings on MTA cost recovery encompass all of (but no more than all) the
2 relevant costs. Once the reasonable, incremental relevant costs are determined, the
3 Department must determine the usable space for purposes of assigning cost responsibility
4 for each attacher.

5 **IV. DESCRIPTION OF THE MTA'S PROPOSAL**

6 **Q. PLEASE DESCRIBE THE MTA'S PROPOSAL AND INITIAL FILING IN THIS**
7 **PROCEEDING.**

8 A. On September 13, 2006, the MTA filed what it called "a preliminary proposal for rates
9 and fees to be charged Carriers for wireless attachments in the central artery tunnels."²⁶
10 The MTA's proposal requests approval of rates and fees to recover its total stated costs
11 associated with the construction, operations, and maintenance of the CA/T Wireless
12 Project. If the cost recovery is accomplished over time, the MTA proposes to add "an
13 annual rate" of 10 percent of the MTA's total stated costs, "plus annual escalation based
14 on [Consumer Price Index] or similar measure. The MTA states that the 10-percent
15 adder "includes the Authority's long term borrowing costs, administration, and
16 depreciation."

17 The MTA identifies its total costs of construction, maintenance, and operations as
18 follows:

19	Replacement Cost of Installing Conduit	\$12,750,333
20	Cost of Space Within Vent Building 6	\$509,400

Cost of Constructing Utility Rooms	\$1,298,000
Consultant Fees (already incurred)	\$47,416.11
Consultant Fees (projected)	\$197,819.84
MTA Staff Time (projected)	\$206,000
TOTAL COST	\$15,008,968.95

As I noted earlier, this cost figure (while it includes inappropriate and inflated costs as described below), does not include all of the relevant costs. Most obviously, it does not include the construction, operations, and maintenance costs of the placement of the System itself. It is necessary for the Department to evaluate the MTA's stated costs for access (i.e., "use of space in the tunnels") and its costs for the System (i.e., "the placement of wireless attachments" and "the cost to the authority of construction, operations and maintenance of the wireless communications system"), as required by the statute, even though the MTA did not include the System costs in its proposal.

According to the MTA, the System cost would include an additional \$10 million for what the MTA calls "installation" and an additional \$1,004,700 to \$1,310,500 annually for the next ten years for operation and maintenance of the System. As noted earlier, the "installation" of the system, as the term is used by the MTA, includes all costs involved in constructing, equipping, and installing a wireless in-tunnel system throughout the CA/T Project. Also, remember that the MTA already has recovered \$100,000 in fee deposits from each carrier that responded with the required deposit to the Carrier RFP,

²⁶ MTA Proposal, at 4.

1 and the MTA also has sought to charge a non-cost based “Fully Earned Payment” of
2 \$500,000 from carriers that sign a lease agreement with the MTA. The Department must
3 ensure in this case that **all** of the MTA’s charges and fees together do not exceed the cost
4 to the MTA of construction, operation, and maintenance of the wireless communications
5 system. The fact that the MTA has arranged to have the Carriers pay the costs associated
6 with the Maverick/Mikom proposal (which covers construction, installation, equipment,
7 and operation and maintenance expense) directly to Maverick/Mikom does not exclude
8 these costs from the Department’s consideration, because the Department has express
9 authority over the reasonableness of the charges to be paid by the Carriers for the CA/T
10 Wireless Project.

11 In addition, the MTA’s description of usable space (Exhibit A) and cost estimates for
12 conduit and the utility rooms included only “Phase II: Northbound Artery” and “Phase
13 III: Southbound Artery.”²⁷ Costs related to Phase I of the CA/T Wireless project, as
14 defined by the MTA, are arbitrarily excluded from the calculation. Significantly, in both
15 the Vendor RFP and the Carrier RFP, the MTA defined the CA/T Wireless Project to
16 include Phase I, and the construction and installation costs associated with Phase I are
17 included in the Maverick/Mikom proposal. In the Vendor and Carrier RFPs, Phase I was
18 identified as the “Seaport Access Road,” with 28,160 linear feet of tunnel and ramp
19 space.²⁸ In discovery, the Joint Carriers asked, “[d]oes the Authority envision that the

²⁷ MTA Proposal, Exhibit A, at 7-11.

²⁸ Vendor RFP, at A-1 to A-3; and Carrier RFP, at Appendix, A-1 to A-3.

1 wireless communications system to be installed in the Seaport Access Road as Phase I of
2 the CA/T Wireless Project will be installed in conduit?²⁹ As of the filing of this
3 testimony, we have not yet received responses to any discovery. Nonetheless, it is clear
4 that the MTA incorporated Phase I to the CA/T Wireless Project, which is now subject to
5 the Department's investigation in this proceeding. In fact, MTA refers to the I-90 (Mass
6 Pike) tunnels in its estimate of system-installation costs.³⁰ Therefore, if the Department
7 determines that some costs related to conduit and utility rooms are appropriate for
8 recovery, then it must specify that any conduit and utility room costs in Phase I are
9 proportionately no more than the costs it approves for the other phases of the CA/T
10 Project.

11 **Q. WHAT DOES THE MTA SAY ABOUT "USABLE SPACE" IN ITS PROPOSAL?**

12 A. The MTA includes a description of "usable space" available for wireless attachments
13 within the CA/T Project. Interestingly, the MTA uses the term inconsistently in
14 proposing the allocation of costs for conduit, Vent Building 6, and the utility rooms. For
15 Vent Building 6 and the utility rooms, the MTA determines the portion of the space
16 within these structures that is usable for wireless service equipment and then uses that
17 measurement to determine the amount of costs to allocate to wireless attachments.
18 Although this may be an appropriate application of usable space on pole attachments for
19 purposes of FAC, it is not the appropriate cost standard for this investigation, as I
20 explained earlier (nor did the MTA calculate the usable space correctly, as demonstrated

²⁹ See Information Request JC-1-22.

1 in the testimony of Ronald W. Buia). Also, the MTA does not estimate the portion of the
2 conduit system to be used for wireless service, in order to allocate wireless attachment
3 conduit costs, as it did for the vent building and utility rooms. Instead, the MTA
4 proposes to allocate **all** of the conduit costs in its replacement cost model to wireless
5 attachments and applies “usable space” as a measure of the linear distance within the
6 tunnels that the service will be installed for the System. Last, the MTA has not proposed
7 a method to divide costs among carriers.

8 **Q. PLEASE EXPLAIN THE DIFFERENCE BETWEEN “ACCESS” AND “SYSTEM”**
9 **COSTS.**

10 A. Access costs are those costs that the MTA incurs directly for the provision of the wireless
11 attachment service in the tunnels. System costs are the costs associated with the actual
12 wireless infrastructure, which will be indirectly incurred by the MTA in that the Carriers
13 will pay the System costs directly to the MTA’s Selected Vendor. In its proposal, the
14 MTA did not include the costs of installing, maintaining, and operating the wireless
15 System. The MTA states that, “in late January, 2003, Maverick/Mikom was
16 preliminarily designated as the successful vendor under the Vendor RFP and its current
17 proposal contemplates that it will cost approximately \$10,000,000 to install the system in
18 the I-90 and I-93 tunnels.”³¹ The MTA’s proposal and “Total Cost” (described above)
19 does not include the \$10 million cost of the Maverick/Mikom System, nor does it include
20 any operations and maintenance costs related to the System. The MTA’s proposal also

³⁰ MTA Proposal, at 3.

³¹ MTA Proposal, at 3.

1 does not include the “Fee Deposit” or “Fully Earned Payment,” which were \$100,000 and
2 \$500,000, respectively, in the Carrier RFP. Clearly, these two fees have no cost basis.
3 The MTA estimated that the costs of the Maverick/Mikom system are \$10 million for
4 installation,³² plus \$1,004,700 to \$1,310,500 per year for ten years for operations and
5 maintenance.³³ Later in this testimony, I will address whether the MTA has met its
6 burden of demonstrating that the System costs are reasonable.

7 The next sections of my testimony will separately evaluate the “access” costs and the
8 “system” costs, as I suggest the Department do in its evaluation.

9 **V. THE MTA’S PROPOSED ACCESS COSTS INCLUDE ITEMS NOT RELATED**
10 **TO THE MTA’S COST TO CONSTRUCT, OPERATE AND MAINTAIN THE**
11 **CA/T WIRELESS SYSTEM**

12 **Q. IS THE MTA’S PROPOSAL WITH RESPECT TO ACCESS COSTS**
13 **CONSISTENT WITH THE POLICY REQUIREMENTS THAT THE**
14 **DEPARTMENT MUST FOLLOW?**

15 A. No. First, as the Department knows by now, having reviewed the proposal, it is woefully
16 inadequate in terms of providing a demonstration of costs for setting rates and fees. The
17 MTA made what it called a “preliminary proposal,” which it reserved the right to
18 supplement or amend. The MTA also did not support its proposal or its cost estimates
19 with expert testimony or adequate sources and work papers for its cost figures. Also,
20 without any explanation, the MTA used different cost standards for valuing its
21 investments – sometimes relying on replacement cost estimates, and other times relying

³² MTA Proposal, at 3.

1 on actual costs of related and unrelated construction. The Joint Carriers (and the
2 Department staff) have issued discovery in an attempt to obtain relevant and sufficient
3 cost information, but responses have not been timely filed and thus were not available for
4 development of this testimony.

5 Second, and more importantly, the MTA is seeking recovery of costs that are not
6 incremental to wireless attachments. In particular, according to the MTA's own filing,
7 the investments it made in the conduit system, Vent Building 6, and the utility rooms
8 were incurred previously and are not new or specifically related to the provision of
9 wireless attachments. For these cost items, it should be clear to the Department that the
10 MTA is using a fully-allocated cost methodology to assign embedded costs to wireless
11 attachments – costs that the MTA incurred whether or not a wireless attachment system is
12 installed in the central artery tunnels. As I discussed earlier, Section 115 does not allow
13 for the use of FAC for setting wireless attachment rates in this case.

14 Third, even if the costs of the conduit system were considered to be recoverable, the Joint
15 Carriers have demonstrated in the testimony of Mr. Buia that provision of wireless
16 services in the CA/T Project does not require the use of conduits.³⁴ Lastly, the costs of
17 the conduit, vent building, and utility rooms have not been calculated consistently or

³³ Carrier RFP, Addendum 1.

³⁴ See also MTA's answers to questions on the Vendor RFP (8/22/02), provided as Exhibit JC-RWB-3, which state in several places that cable may be installed outside the conduit (see answers to questions 24-25, 28-31).

1 reasonably. I will come back to the methodological shortcomings of the cost calculations
2 later in my testimony.

3 **Q. PLEASE DISCUSS THE MTA'S PROPOSAL WITH RESPECT TO CONDUIT**
4 **COSTS.**

5 A. The MTA calculates its cost of conduit based on "the replacement cost of installing
6 conduit in the central artery tunnels in lieu of that proposed to be utilized by the
7 Carriers." The MTA has never indicated that it is proposing to actually install or replace
8 conduit as part of the CA/T Wireless Project, so it is apparently using "replacement cost"
9 as a methodology for valuing its previously installed investment. The MTA calculates
10 "replacement cost," as shown in Exhibit B-1 to its proposal, by calculating "the average
11 replacement cost per linear foot of conduit" and then multiplying that cost by the total
12 number of linear feet.³⁵

13 The average replacement cost is derived from a cost model that estimates direct and
14 indirect costs. The direct costs include labor and materials, with labor costs derived from
15 certain assumptions about crew and time requirements, while materials costs are based on
16 current price quotes or inflated 2002 price quotes.³⁶ The indirect costs appear to be
17 calculated using cost factors (i.e., ratios) as a function of the total labor costs. Contractor
18 overhead and profit factors are then applied to the sum of the direct and indirect costs,
19 and, lastly, traffic set-up and police details are added. The sum of all these costs is
20 \$338.25 per linear foot, which is then multiplied by the MTA's calculation of 37,695

³⁵ MTA Proposal, at 12.

1 linear feet, for a “Tunnel Raceway Replacement Cost Estimate” of \$12,750,333. As
2 noted earlier, however, this estimate does not include up to 28,160 linear feet of tunnel in
3 the Seaport Access Road (Phase I).

4 **Q. YOU MENTIONED EARLIER THAT THE MTA’S PROPOSAL FOR CONDUIT**
5 **COSTS IS BASED ON A FULLY-ALLOCATED METHODOLOGY. PLEASE**
6 **EXPLAIN HOW YOU REACH THAT CONCLUSION.**

7 A. I reach that conclusion because the MTA indicates it already has built a conduit system,
8 in which it has spare conduit capacity that can be used for a wireless communications
9 system, if necessary. The MTA is not replacing conduit, nor is it building new conduit.
10 Therefore, in no way can the conduit system be considered as a “cost to the authority of
11 construction ... of the wireless communications system in the tunnels.” The tunnel
12 conduit system was pre-existing, so the costs were incurred long before Section 115
13 required an incremental cost methodology for a wireless attachment system in the CA/T
14 Project. It is clear then that the MTA is seeking here to allocate to wireless attachments
15 costs that it would have incurred even if a wireless system were never installed. That is,
16 by definition, an application of the fully-allocated cost method that Section 115 does not
17 allow.

18 **Q. WHAT EVIDENCE IS THERE THAT THE CONDUIT SYSTEM WAS NOT**
19 **BUILT FOR WIRELESS ATTACHMENTS?**

³⁶ MTA Proposal, Exhibit B-1 (legend at top of spreadsheet).

1 A. The MTA's proposal, in its "Description of Usable Space" (Exhibit A), shows that the
2 conduit system was not built for wireless attachments. For example, the MTA's proposal
3 states:

4 Within the roadway and major ramps, there generally are two (2) spare 3-inch
5 communications conduits; in minor ramps typically there is one (1) spare 3-inch
6 communications conduit. In all cases, the Selected Vendor [construction
7 company – not wireless provider] must install a plenum rated innerduct within the
8 available conduit prior to installing their fiber optic or coaxial cable.³⁷

9 From this description, it is clear that the MTA installed the conduit for its own use and
10 purposes in the central artery tunnels regardless of any future installation of the CA/T
11 Wireless Project. Because the MTA is not incurring an incremental cost for the conduit,
12 even if the conduit were used, it cannot be considered as a proper cost of the CA/T
13 Wireless System.

14 Further evidence that the conduit system already exists is found elsewhere in the MTA's
15 proposal to the Department: "Fiber optic cable, connecting the main equipment to the
16 remote equipment room, must be installed along the tunnel roadway within the spare
17 communications conduit designated by the Authority."³⁸ The MTA further notes that if
18 spare conduit is not available, then the Vendor must install surface-mounted conduit, but
19 if that is required, then it becomes part of the construction cost of the system, which is
20 charged to the Carriers up-front, and is not a direct cost of the MTA.

³⁷ MTA Proposal, at 8 and 10. The "Selected Vendor" referenced here is the construction firm responding to the MTA's "Vendor RFP," as described on page 3 of the MTA's Proposal. The language used in the Proposal is identical to that in the Vendor RFP.

³⁸ MTA Proposal, at 10.

1 In addition, the MTA notes that it “commenced its efforts on the so-called “CA/T
2 Wireless Project”” in May 2001. The fact that the CA/T Project was planned long before
3 the MTA even started its wireless-service effort, further shows that the costs of
4 constructing the conduit system were not a cost to the MTA of construction of the CA/T
5 Wireless Project.

6 **Q. PLEASE DISCUSS THE MTA’S PROPOSAL WITH RESPECT TO THE**
7 **CONSTRUCTION COSTS FOR VENT BUILDING 6.**

8 A. The MTA states in its proposal that its total cost includes “the cost of equipment space
9 within the Central Office at Vent Building 6.”³⁹ According to the “Description of
10 System” (Exhibit C) in the MTA’s proposal, “[i]n Vent Building 6, there will be a secure
11 equipment area housing the MIDAS Master Unit and the various [radio frequency]
12 combiner networks for each carrier.”⁴⁰

13 Rather than using a model for replacement costs, as it did to value the conduit
14 investment, the MTA shifts gears and values its investments in Vent Building 6 based on
15 its historic cost, or the “per-square foot construction cost of Vent Building 6,” which the
16 MTA says is equal to \$225. The MTA provided no support or back-up for this figure.
17 The MTA states “Vent Building 6 has approximately 2,264 square feet which is available
18 for occupancy by the Carriers and the Selected Vendor with System-related equipment.”

³⁹ MTA Proposal, at 5.

⁴⁰ MTA Proposal, Exhibit C, at 16. “MIDAS” is the wireless infrastructure system that Maverick/Mikom plan to install in the CA/T Project as the common system for communications use by all of the carriers offering wireless service to customers within the CA/T Project. It is referred to as the “System” in the body of my testimony.

1 The MTA, however, does not specify how much of this space is for the use of the
2 Carriers and how much is for the use of the Selected Vendor and whether all of this space
3 is in fact necessary for the System. Multiplying the per-square foot construction cost of
4 Vent Building 6 by the 2,264 square feet of space available for the wireless service
5 equipment, results in a Vent Building cost of \$509,400. For reasons similar to those
6 discussed above with respect to tunnel conduit costs, none of these costs is appropriate
7 for recovery from wireless carriers as an attachment fee, according to the requirements of
8 Section 115. Vent Building 6 was constructed regardless of whether there is a wireless
9 attachment service, so the construction costs of the facility cannot be allocated to the
10 wireless attachments.

11 **Q. WHAT EVIDENCE IS THERE THAT VENT BUILDING 6 WAS NOT BUILT**
12 **FOR THE PURPOSE OF SUPPORTING WIRELESS ATTACHMENTS?**

13 A. According to the MTA's filing, "[v]entilation buildings provide mechanical, electrical
14 and control equipment necessary to furnish ventilation, power, lighting and control for
15 the tunnels."⁴¹ Clearly, Vent Building 6 is not part of the construction for the wireless
16 system, because its purpose is to serve other, critical functions for the operation of the
17 tunnel as a roadway. The ventilation buildings already have been built, so the costs
18 would exist whether or not there is a wireless attachment system in the CA/T Project.
19 The fact that space within the building's sub-basement also can be used to house

⁴¹ MTA Proposal, at 8.

1 equipment for a wireless service does not justify including and allocating the cost of
2 constructing the building as a cost of wireless attachments.

3 **Q. PLEASE DISCUSS THE MTA'S PROPOSAL WITH RESPECT TO THE**
4 **CONSTRUCTION COSTS FOR UTILITY ROOMS WITHIN THE TUNNELS.**

5 A. The MTA's total costs include "the cost of constructing the utility rooms appurtenant to
6 the System in which rooms necessary System equipment will be located."⁴² According to
7 the "Description of System" (Exhibit C) in the MTA's proposal, the system will have "40
8 remote equipment locations," and "each MIDAS Remote Unit will be mounted against
9 the wall in either the Utility Rooms or in the Cross Passages..."⁴³ The MTA states that
10 "the central artery tunnels contain a total of 28 utility rooms, of variable size, for Carrier
11 use in connection with the System."

12 To develop its estimates of the cost of the utility rooms in its proposal, the MTA again
13 uses historic construction costs, as it did with the costs for Vent Building 6. However,
14 unlike the estimate for the vent building, the MTA does not use the actual construction
15 costs for the utility rooms; rather, the MTA generates a cost estimate for the utility rooms
16 based on its stated construction cost of the CA/T Project. The MTA estimates that "each
17 utility room will require approximately 11.25 square feet of space for the wireless
18 equipment," and states that "the per-square foot construction cost of the central artery
19 tunnels is \$4,121."⁴⁴ Therefore, according to the MTA, "the total utility space cost is 28

⁴² MTA Proposal, at 5.

⁴³ MTA Proposal, Exhibit C, at 16-17.

⁴⁴ MTA Proposal, at 13.

1 rooms x (\$4,121/s.f. x 11.25 s.f./room), for a total construction cost of \$1,298,000.”⁴⁵ As
2 supported by the expert testimony of Mr. Buia, the wall-mounted MIKOM remote-unit
3 equipment is low profile and may use up to two square feet of space in each utility room.

4 For reasons similar to those discussed above with respect to conduit and vent building
5 costs, none of these “utility room” costs is appropriate for recovery from wireless carriers
6 as an attachment fee, according to the requirements of Section 115. The utility rooms
7 would have been built regardless of whether wireless service is provided, so the
8 construction costs of the tunnels, allocated to the utility room facilities, cannot be
9 charged to the wireless attachments.

10 **Q. WHAT EVIDENCE IS THERE THAT THE UTILITY ROOMS WERE NOT**
11 **BUILT FOR WIRELESS ATTACHMENTS?**

12 A. According to the MTA’s proposal, “[u]tility rooms contain equipment for monitoring and
13 controlling vehicular traffic and are equipped with AC power.”⁴⁶ As with Vent Building
14 6, it is clear that utility rooms are not part of the construction for the wireless system, as
15 they serve other, critical functions for the operation of the tunnel as a roadway. The
16 utility rooms already have been built, so the costs would exist whether or not there is a
17 wireless attachment system in the central artery tunnels. Therefore, even if the costs
18 were calculated correctly (which they were not, as I will discuss later in this testimony),
19 the costs of building utility rooms should not be allocated to wireless carriers.

⁴⁵ MTA Proposal, at 13.

⁴⁶ MTA Proposal, at 8.

1 **Q. PLEASE DISCUSS THE MTA'S PROPOSAL WITH RESPECT TO THE**
2 **CONSULTANT FEES AND MTA STAFF TIME.**

3 A. According to the MTA, its total costs include "to-date and projected expenditures on
4 outside consultant fees in connection with planning, preconstruction coordination, and
5 project management of the System," and "projected expenditures on internal staff
6 resources in connection with planning, preconstruction, coordination, and project
7 management of the System."⁴⁷

8 The MTA claims that it has already spent \$47,416.11 on outside consultants, though it
9 has not substantiated or provided back-up for these billings. The MTA projects future
10 consultant fees of \$197,819.84, based on "budget estimates" provided by the consultants,
11 though it has not provided these estimates or any other support for the projections. In
12 terms of projections for internal staff costs, the MTA "conservatively estimates that such
13 future activities will require approximately 2,060 person hours. At an average hourly
14 rate of \$100, the projected cost is \$206,000," again with no support for its estimate.⁴⁸

15 Unlike the allocated costs for the construction of conduits, vent buildings, and utility
16 rooms, properly documented, reasonable costs for consultants and internal staff that the
17 MTA would not bear, but for the provision of a wireless attachment system, are
18 permissible for recovery pursuant to Section 115. However, even though this total of
19 \$451,235.95 constitutes permissible costs, the costs must be evaluated to determine

⁴⁷ MTA Proposal, at 5.

⁴⁸ MTA Proposal, at 13.

1 whether they are supported and are reasonable. As I will discuss later in my testimony,
2 the MTA has not met its burden of demonstrating that the amount of consultant and
3 internal staff costs related to the wireless attachment service is reasonable.

4 **VI. THE COSTS IN THE MTA'S PROPOSAL ARE UNREASONABLE AND ARE**
5 **CALCULATED USING INCORRECT AND INCONSISTENT COST**
6 **STANDARDS.**
7

8 **Q. ARE THE COSTS REPORTED BY THE MTA FOR THE CONSTRUCTION OF**
9 **CONDUIT, VENT BUILDING 6 AND THE UTILITY ROOMS REASONABLE**
10 **AND RECOVERABLE FROM WIRELESS ATTACHMENTS?**

11 A. No. As discussed above, Section 115 does not allow for recovery of these embedded
12 costs since they were not incurred for provision of the wireless communications system.

13 Further, there are significant problems with the MTA's proposal. First, in terms of
14 conduit costs, it is clear that charging wireless carriers for the construction cost of a
15 conduit – regardless of whether it is valued based on historic or replacement cost – is
16 unreasonable because conduit is not needed for an “effective and seamless” wireless
17 system in the CA/T Project. In the testimony of Mr. Buia, it is demonstrated
18 conclusively that the MTA's decision to mandate the use of conduit for transmission
19 between remote units, antennas, and the central office is not based on electrical code or
20 engineering requirements or on the basis of cost-efficiency.

21 Second, the cost methodologies used by the MTA are inconsistent and applied
22 incorrectly.

1 Third, the MTA has not substantiated the reasonableness of the costs, and the testimony
2 of Mr. Buia demonstrates that the MTA's cost estimates for constructing conduit are
3 inflated.

4 **Q. WHY DO YOU SAY THAT THE MTA'S COST METHODOLOGIES ARE**
5 **INCONSISTENT AND WHY IS THIS A PROBLEM?**

6 A. The Department and regulated entities in Massachusetts are not bound by state law to use
7 any specific cost methodology for valuing investment. See *American Hoechst Corp. v.*
8 *Department of Pub. Utils.*, 379 Mass. 408, 413 (1980) (“[W]hen alternative methods are
9 available, the department is free to select or reject a particular method as long as its
10 choice does not have a confiscatory effect or is not otherwise illegal”); *New England Tel.*
11 *& Tel. Co. v. Department of Pub. Utils.*, 371 Mass. 67, 71 (1976) (holding that although
12 the Department is not required to use a method based on an adjusted historic test year in
13 rate proceeding, it is permitted to do so).

14 But it is not appropriate for the Department, or any entity required to justify its rate levels
15 based on costs, to mix and match cost standards arbitrarily over time. It is certainly not
16 appropriate to use different standards within the same filing, as the MTA has done here.

17 As noted above, the MTA uses three different cost methods to value its investments in
18 conduit, Vent Building 6, and the utility rooms. The MTA uses replacement cost to value
19 its investment in conduit, actual construction cost to value its investment in Vent
20 Building 6, and tunnel construction cost to value its investment in the utility rooms.

21 Allowing the MTA to use inconsistent cost standards for different categories of

1 investment would give the MTA the opportunity to choose whichever method produces
2 the highest cost for each category.⁴⁹ As I testified earlier, Section 115 does not allow for
3 allocation or recovery of costs not required for provision of a wireless attachment system,
4 but even if it did, the MTA would have to use the same cost standard consistently to
5 value all of its investments. Notwithstanding that it is not appropriate to use inconsistent
6 cost standards within a proposal; the MTA also did not even apply those inconsistent
7 standards reasonably.

8 **Q. WHAT COST STANDARD SHOULD THE DEPARTMENT USE IN THIS CASE?**

9 A. The Department should not allow the recovery of any conduit, vent building, or utility
10 room costs in this case. But if it does allow for such cost recovery, then, consistent with
11 its long-standing ratemaking precedent, the Department should use the actual, historic
12 costs incurred by the MTA for construction of the conduit, Vent Building 6, and the
13 utility rooms. See, e.g., Boston Edison Company, D.P.U. 84-48, at 5 (1985); Butterworth
14 Water Company, D.P.U. 85-152, at 6-7 (1987). The MTA already uses the historic cost
15 standard for Vent Building 6 and the utility rooms and provides no explanation why it
16 chose to use a completely different standard, replacement cost, to value its conduit
17 investment.

⁴⁹ A concrete example of how different cost methods can be used to justify higher costs is discussed later in my testimony with respect to conduit costs. By using a replacement cost methodology to value conduit investment, the MTA includes traffic set-up and police detail costs – costs that would not have been incurred historically since the original construction took place before there was any vehicular traffic in the tunnels.

1 The MTA has not supplied any information on its actual construction costs for the
2 conduit system, but Mr. Buia has developed an analysis that demonstrates the reasonable
3 costs for construction of a conduit system for the time period when the MTA actually
4 built its conduit system.

5 **Q. PLEASE COMMENT ON THE REASONABLENESS OF THE MTA'S COST**
6 **ESTIMATE FOR CONDUIT.**

7 A. As I noted before, the MTA used a replacement cost model to value its investment in
8 conduit. The first problem with the MTA's analysis is that it has provided no back-up
9 documentation to substantiate the costs in its model. Exhibit B-1 lists the cost categories
10 but does not explain what they are and provides no evidence on which to judge whether
11 the cost estimates are accurate. Therefore, the Department has no basis on which to
12 determine whether the estimated costs are accurate or reasonable.

13 The second problem with the tunnel conduit cost analysis is that it includes traffic set-up
14 and police detail costs that would not have been incurred by the MTA in the construction
15 of the existing conduit before the tunnel system was open to the public. This highlights
16 the problem of allowing the MTA to pick and choose among cost methods for different
17 categories of investment. The CA/T Project did not open for vehicular traffic until
18 January 2003, and the Vendor RFP referencing already-existing conduit was issued in

1 July 2002.⁵⁰ Therefore, when the existing conduit was constructed, the central artery
2 tunnels were not open for traffic, so the construction could not have required traffic set-
3 up and police details. Yet, now that the CA/T Project is open, these costs are included in
4 the “replacement cost” methodology even though no conduit replacement is taking place.
5 These costs are significant. In fact, the traffic set-up and police detail costs alone
6 represent 43 percent of the replacement cost for conduit in the MTA’s own cost model.
7 Because the conduit to be used for the wireless communication system already exists and
8 was installed when there was no public vehicular traffic in the tunnels, the traffic set-up
9 and police detail costs were not incurred by the MTA for construction of the existing
10 conduit.

11 A third problem with the tunnel conduit cost analysis is that it grossly overstates the
12 amount of conduit necessary to construct such a System, if in fact conduit is even
13 necessary or required for construction, which it is not. As supported by the expert
14 testimony of Mr. Buia, the MTA has included overlapping segments of tunnel, on-ramps
15 and off-ramps. Mr. Buia concludes that only approximately 11,300 lineal feet of conduit
16 would be necessary to construct the System.⁵¹ Thus, the MTA's analysis on its proposal
17 is further flawed.

⁵⁰ According to the Authority’s web site, “The I-90 extension through South Boston to the Ted Williams Tunnel and Logan Airport opened in January 2003. The northbound lanes of the underground highway replacing the elevated Central Artery opens in March 2003, the southbound lanes opened on a limited basis in December 2003.” <http://www.masspike.com/bigdig/background/index.html> (accessed September 29, 2006).

⁵¹ Mr. Buia also notes that there are 5,400 lineal feet in the Seaport Access portion of the CA/T Project.

1 Mr. Buia demonstrates that the reasonable construction cost for the tunnel conduit system
2 is much lower than the MTA's replacement cost model estimates the cost to be. In fact,
3 Mr. Buia has testified that the reasonable cost is \$75.75 per lineal foot for 4" conduit and
4 approximately \$59.52 per lineal foot for 3" conduit, and that the lineal feet for use of
5 conduit for wireless services is only 11,300, for a total reasonable cost of conduit
6 construction of \$855,975 for 4" conduit or \$672,576 for 3" conduit.

7 **Q. IF CONDUIT CONSTRUCTION COSTS WERE ALLOWED FOR RECOVERY,**
8 **SHOULD ALL OF THE REASONABLE COSTS BE ALLOCATED TO**
9 **WIRELESS ATTACHMENTS?**

10 A. No. The total amount cannot be charged to the wireless carriers since the conduit system
11 is used or available for use for operating the tunnels as a roadway or for other purposes,
12 regardless of whether there are wireless attachments. The MTA allocates only a portion
13 of Vent Building 6 and utility room costs to wireless attachments since the wireless
14 equipment only requires a limited amount of space in those structures. Similarly, the
15 fiber cables used to provide wireless service only occupy a limited amount of space
16 within a single conduit, so only a portion of conduit costs can be allocated to wireless
17 attachments. The "usable space" for wireless attachments within the MTA's conduit
18 system is not 100 percent, so 100 percent of the costs cannot be allocated to the service.
19 According to Mr. Buia, for a 3" conduit, about 19.6 percent of the conduit's "usable
20 space" would be occupied for wireless attachments; and for a 4" conduit, only about 11
21 percent of the conduit's "usable space" would be occupied for wireless attachments.

1 Applying these ratios to the total costs above results in a conduit cost for attachments of
2 \$94,157.25 for 4" conduit, or \$131,824.89 for 3" conduit.

3 The Department should not allow recovery of even this more appropriate estimate of
4 conduit construction costs. For the reasons discussed above—that Section 115 does not
5 authorize an allocation of already-incurred costs to wireless attachments, and that the
6 wireless communications system does not even require conduit—the Department should
7 not include any conduit construction costs in its maximum rates and fees for wireless
8 attachments. If the Department does allow for recovery of some conduit construction
9 costs, it should use the \$94,157.25 or \$131,824.89 cost estimates provided above.

10 **Q. PLEASE COMMENT ON THE REASONABLENESS OF THE MTA'S COST**
11 **ESTIMATE FOR VENT BUILDING 6.**

12 A. The MTA stated that its cost estimate for Vent Building 6 was derived from the actual
13 construction cost of the facility. However, the MTA did not provide any back-up or
14 support for this cost figure, and we were unable to obtain any additional information via
15 discovery to date. Also, the MTA has overestimated the amount of space in Vent
16 Building 6 that would be necessary for wireless equipment. Mr. Buia has testified that
17 the Carriers' actual maximum space needed is about 1,400 square feet, which would
18 reduce the costs associated with use of Vent Building 6 to \$315,000, using the \$225 per-
19 square foot construction cost.

1 Even if substantiated, the \$225 per square foot cost of Vent Building 6 would be an
2 unfairly high basis from which to calculate a rate for wireless use, since Vent Building 6
3 is massively constructed, orders of magnitude beyond the type of construction required
4 for the mere sheltering of wireless equipment. The wireless carriers should not have to
5 shoulder a pro rata share of the high cost of that type of construction, where it confers no
6 added value.

7 **Q. PLEASE COMMENT ON THE REASONABLENESS OF THE MTA'S COST**
8 **ESTIMATE FOR THE UTILITY ROOMS.**

9 A. The MTA stated that its cost estimate for the utility rooms was derived from the
10 construction costs for the central artery tunnels. However, the MTA did not substantiate
11 this cost estimate and did not explain why it did not use the actual construction costs for
12 the utility rooms, as it did for Vent Building 6.

13 Further, it is important to note here that the stated per-foot construction costs for the
14 tunnels are roughly *eighteen times greater* than the construction costs for Vent Building
15 6. It is beyond comprehension that the costs of the Big Dig itself are representative of
16 costs for utility rooms “appurtenant” to the wireless system. There is no justification for
17 the MTA to use the costs of the tunnels as a proxy for the costs to construct utility rooms.
18 If a proxy must be used, it would be more appropriate to use the construction costs for
19 Vent Building 6 since the vent building and the utility rooms are used for comparable
20 purposes related to the wireless system – housing equipment that is required for the
21 system. As noted earlier, Mr. Buia has testified that the wall-mounted MIKOM remote-

1 unit equipment is low profile and may use up to two square feet of space in each utility
2 room. Applying the construction cost for the Vent Building of \$225 per-square foot, to
3 the two square feet required in each utility room, times the 28 utility rooms, results in a
4 cost of \$12,600. This is a far more reasonable proxy for the cost of utility rooms than the
5 MTA's proposal. But even though it is more reasonable, it is still high, since, as stated
6 above, the massiveness of Vent Building 6 makes its cost an unfair basis for calculating
7 the cost of sheltering wireless equipment.

8 **Q. PLEASE COMMENT ON THE REASONABLENESS OF THE MTA'S COST**
9 **ESTIMATE FOR CONSULTANTS AND INTERNAL STAFF.**

10 A. As with the other cost components, the MTA's proposal included no back-up or support
11 information to justify its cost estimates for outside consultants and internal staff. We
12 have sought through discovery to obtain relevant cost information, but it has not been
13 supplied to date. Clearly, the MTA has not met its burden in this case of demonstrating
14 that these costs are reasonable or accurately estimated. In addition, as I noted earlier,
15 carriers who responded according to the terms of the Carrier RFP already have each paid
16 \$100,000 to the MTA as a "Fee Deposit." The MTA's Carrier RFP stated that this fee
17 deposit was "to be applied by the Authority against any and all out-of-pocket costs and
18 expenses incurred by the Authority in connection with the preparation of this RFP and
19 the execution of the Carrier Lease Agreement and Vendor Maintenance Agreements . . .
20 ."⁵² This should cover a lot of costs. To the extent that the MTA's previously incurred

⁵² Carrier RFP, at 12.

1 consultant fees are related to the preparation of the Carrier RFP, the amounts already paid
2 in the fee deposits should be credited against any cost recovery that the Department
3 approves in this docket.
4

5 **VII. REASONABLENESS OF SYSTEM COSTS**

6 **Q. YOU SAID THAT THE MTA DID NOT INCLUDE THE SYSTEM COSTS IN ITS**
7 **PROPOSAL. ARE THE SYSTEM COSTS ALLOWED FOR RECOVERY?**

8 A. Yes. Although the MTA did not include them in its proposal, the installation,
9 maintenance, and operation costs for the wireless system itself are recoverable and are
10 subject to review by the Department in this case to ensure that they are reasonable. The
11 MTA has chosen to outsource the installation, operations, and maintenance of the system
12 to Maverick/Mikom, but this does not insulate these costs from review by the
13 Department. As I have shown above, these costs are subject to the Department's review
14 of reasonableness. However, an adequate analysis of the reasonableness of the System
15 costs would require more information than the MTA has supplied to date. When the
16 Carriers and the Department receive adequate information on the System costs from the
17 MTA, we may need to supplement with updated or additional testimony from another
18 witness.

19 However, I would note here that the Maverick/Mikom costs are based entirely on a
20 system design that contemplates use of conduit for provision of wireless services within
21 the CA/T Project. As Mr. Buia demonstrates in his testimony, conduit is not needed for

1 “an effective and seamless state-of-the-art wireless communications system in the Central
2 Artery tunnels,” so the Maverick/Mikom costs appears to be inflated and unreasonable by
3 the design parameters imposed by the MTA.

4 Additionally, the MTA did not propose a method for distributing the System costs among
5 the users. I believe that “usable space” can be a guide for such a distribution of costs.
6 Because this investigation is an exercise in determining incremental cost, “usable space”
7 should be used as a measurement of usable capacity in the system in order to divide costs
8 among Carriers. Therefore, the Department should divide cost responsibility for the
9 usable space by the number of Carriers using the System. For example, if four carriers
10 use the System, then each would bear one quarter of the costs. In that way, the MTA will
11 be assured recovery of its costs, and each carrier would pay only for its portion of the
12 System. For example, if four carriers use the System at the outset and pay up-front for
13 one quarter of the construction costs each, and the MTA later authorizes a fifth carrier to
14 use the System, then that fifth carrier must pay one fifth of the already-paid installation
15 costs to the original four carriers. Under that scenario, the costs would be split five ways,
16 and the payment made by the fifth carrier would be used to implement the adjustment
17 among the existing four carriers who until that time have borne the entire burden of the
18 System cost.

19

VIII. SUMMARY AND CONCLUSION

Q. YOU HAVE CRITICISED THE MTA'S PROPOSAL. DO YOU HAVE AN ALTERNATIVE PROPOSAL?

A. Yes. The MTA has not provided sufficient information to accurately assess what its costs are for the provision of wireless attachments in the CA/T Project, but it is possible to use the information they have provided, along with other publicly available information and expert testimony provided by the Joint Carriers, to develop appropriate rates and fees under Section 115, even given the limitations on the information provided.

Based on the foregoing analysis in my testimony and the testimony of Mr. Buia, I am able to develop a proposal and two alternatives for the Department to consider. This proposal and the alternatives address access costs only. As I discussed above, the Department also needs to determine a reasonable level of System costs and limit the MTA's cost recovery of System costs to that level. Once the access and System costs are determined and allocated to each carrier, the Department must declare that these are the sum total of allowable costs and ensure that the MTA does not declare any new or additional costs, fees, or other exactions – direct or indirect – with respect to the construction, operations, maintenance or use of the system or access to the CA/T Project for wireless attachments. Both access and System costs should be divided on the basis of the number of carriers using the System as described above.⁵³

⁵³ Any costs related to Phase I – the Seaport Access Road – must follow the same methodology and must be proportional to the allowed costs approved by the Department here.

1 **Q. PLEASE DESCRIBE YOUR PROPOSAL ON ACCESS COSTS.**

2 A. In order to be consistent with the statutory directives in Section 115, the MTA's cost
3 recovery should be limited to only those costs that are specifically related to the
4 provision of wireless communications services in the tunnels. As I said earlier, this
5 means that the MTA's recovery is limited to the difference between the MTA's costs
6 without the provision of the wireless system and the MTA's costs with the provision of
7 the wireless system.

8 I have demonstrated that the MTA's costs for construction of conduit, Vent Building 6,
9 and the utility rooms were incurred for purposes of operating the tunnels as roadways and
10 thus are not costs related to the provision of wireless service. Therefore, these costs are
11 not recoverable.

12 Access costs that **are** recoverable are reasonable, wireless-related costs for outside
13 consultants and internal MTA staff. The MTA has not substantiated these consultant and
14 staff costs, but if one were to take them as given, the MTA's incremental access costs for
15 wireless services are \$451,235.95.⁵⁴

16 Therefore, the most appropriate outcome of this case, consistent with the requirements of
17 Section 115 and the evidence presented, is for the Department to limit the MTA's

⁵⁴ As noted earlier, this amount must be reduced by the credited fee deposits if the previously-incurred consultant expenses were related to the preparation of the Carrier RFP.

1 recovery for access costs to a maximum of \$451,235.95, provided that the MTA provides
2 adequate proof in this proceeding of the amount and reasonableness of those costs.

3 **Q. WHAT IS THE FIRST ALTERNATIVE ON ACCESS COSTS?**

4 A. The Department should not allow for any recovery of already-incurred costs for conduit,
5 Vent Building 6, and the utility rooms. However, if the Department were to allow such
6 recovery, it should only allow for recovery of reasonable costs related to the Vent
7 Building and the utility rooms, to the extent these facilities (or similar space) are actually
8 required and used for an effective and seamless state-of-the-art wireless communications
9 system. Conduit is not required for the system and should not be charged to the carriers.

10 Ideally, if the Department were to allow for some construction costs related to the Vent
11 Building and utility rooms, it should determine the actual additional cost to the MTA for
12 the additional space in the facilities, rather than just take the total construction cost and
13 allocate a portion to the space used for wireless services. In other words, the MTA had to
14 construct the Vent Buildings and utility rooms for purposes of using the tunnels as
15 roadways. These buildings are large enough that they can accommodate other uses, such
16 as housing equipment for wireless service. But the additional per-square foot cost of
17 constructing the buildings surely would be smaller than the average per-square foot cost
18 of constructing the buildings. This is true for the simple reason that a certain portion of
19 construction costs are fixed – they do not vary with the size of the building. The MTA
20 has not provided at this time sufficient evidence from which to accurately determine the

1 difference between the marginal per-square foot construction cost and the average-per
2 square foot construction cost, but the Department would be justified in discounting the
3 construction costs at some level to account for the difference between marginal
4 construction cost and average construction cost.

5 Assuming that the Department does not decide to discount the construction costs in the
6 manner I just suggested, then the Department should use the reasonable cost
7 approximations described earlier in this testimony and in the testimony of Mr. Buia:

8	Vent Building:	\$315,000
9	Utility Rooms:	\$12,600
10	TOTAL:	\$327,600

11 The Department would then add the consultant and internal staff costs to the maximum of
12 \$451,235.95 to this figure for a total cost of access equal to \$778,835.95. Again I must
13 stress that it is not consistent with Section 115 for the Department to allow for any
14 recovery of vent building and utility rooms costs as part of the access fee, but this is
15 certainly a more reasonable approach to cost recovery for these facilities if the
16 Department disagrees.

17 **Q. WHAT IS YOUR SECOND ALTERNATIVE ON ACCESS COSTS?**

18 A. If the Department were to allow for recovery of conduit costs, then it should limit such
19 recovery to the \$94,157.25 (4" conduit) or \$131,824.89 (3" conduit) cost estimates
20 described earlier. Adding these conduit costs to the \$778,835.95 that I identified in the

1 alternative, above, results in a total cost for access of \$872,993.20 or \$910,660.84,
2 depending on whether the MTA's conduit is 4" or 3", respectively. Again, I believe that
3 any recovery for conduit, vent building and utility room construction costs is not
4 consistent with Section 115.

5 **Q. DOES THAT CONCLUDE YOUR TESTIMONY?**

6 A. Yes, it does.



MASSACHUSETTS TURNPIKE AUTHORITY

State Transportation Building, 10 Park Plaza, Suite 4160, Boston, Massachusetts 02116
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Exh. JC-PBV-2

MATTHEW J. AMORELLO

Chairman

CHRISTY P. MIHOS

Vice Chairman

JORDAN LEVY

Director

July 10, 2002

Dear Interested Party:

The Massachusetts Turnpike Authority is seeking competitive lease proposals for the installation and maintenance of a carrier-neutral shared antenna wireless telephone communications system within the new Central Artery Tunnels. The Authority will make this wireless system available for use by wireless telephone service providers ("carriers") under separate agreements.

The enclosed Request for Proposals ("RFP") is intended to solicit competitive lease proposals from equipment manufacturers or distributors, telecommunications facility management firms, wireless carriers that wish to assume responsibility for system installation and operations, engineering firms, or any other party that is qualified to install, operate, maintain, and upgrade the system contemplated by this RFP. The RFP outlines the submission requirements and selection criteria, provides an overview of the lease agreement that the vendor who is selected through this process will enter into with the Authority, and describes the CA/T Project facilities and the design criteria for the system to be installed. This RFP does not seek proposals for the provision of wireless telephone service, either from carriers or from facility managers that would sublease system capacity to carriers.

Following the release of this RFP, the Authority will solicit carriers who wish to provide wireless services within the system. Each interested carrier will be required to enter into a direct lease agreement with the Authority to rent space in the system and an agreement with the vendor under which the vendor will provide system maintenance and repair for a fee payable to the vendor. Pursuant to these carrier lease agreements, the initial costs of system construction and installation will be funded by carrier pre-payments to an account to be controlled by the Authority.

Sealed competitive lease proposals must be submitted by 12:00 p.m. on August 22, 2002 at the Authority's offices at Ten Park Plaza, Suite 4160, Boston, Massachusetts. Further information on a tour of Central Artery Tunnel facilities to be held on July 31, 2002 will be forwarded to you. I look forward to seeing you there.

Very truly yours,

Stephen J. Hines
Chief Development Officer





The Massachusetts Turnpike Authority
Matthew Amorello, Chairman

Request for Proposals



Central Artery Tunnel Wireless Project

July 10, 2002

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I Introduction

A. The CA/T Wireless Project

The Massachusetts Turnpike Authority (the "Authority") is an independent state authority created under M.G.L. Chapter 81A et. seq. (the "Enabling Act"). The Authority is seeking competitive lease proposals for the installation and maintenance of a carrier-neutral shared antenna wireless telephone communications system (the "System") within selected tunnel sections (the "Central Artery Tunnels") of the Central Artery/Tunnel Project ("CA/T Project"). The Authority will make the System available for use by wireless telephone service providers ("Carriers") under separate agreements.

The System will be installed within the three phases of the CA/T Project: the Seaport Access Roadway as Phase 1, the Northbound Artery as Phase 2, and the Southbound Artery as Phase 3. Depending on the construction and completion schedule of the CA/T Project, preliminary design and installation of the System may be executed sequentially in order of phase number, or contemporaneously in two or more of any of the phases at once. In the future, the Authority may opt to expand the System to the Harbor, Prudential, and Central Artery North Area ("CANA") Tunnels. The installation of the System shall be closely coordinated with CA/T Project personnel and various other ongoing construction contracts.

This Request for Proposal ("RFP") is intended to solicit competitive lease proposals from equipment manufacturers or distributors, telecommunications facility management firms, Carriers that wish to assume responsibility for System installation and operations, engineering firms, or any other party that is qualified to install, operate, maintain, and upgrade the System contemplated by this RFP ("Vendors"). It outlines the Vendor submission requirements and Vendor selection criteria, provides an overview of the agreement that the Vendor who is selected through this process (the "Selected Vendor") will enter into with the Authority (the "Vendor Lease Agreement"), and describes the CA/T Project facilities and the design criteria for the System ultimately to be installed. This RFP does not seek proposals for the provision of wireless telephone service, either from Carriers or from facility managers that would sublease System capacity to Carriers. Carriers and facility managers are welcome to submit proposals to this RFP, but will not be given authority to provide telephone service to customers under the Vendor Lease Agreement.

Once the Authority has designated the Selected Vendor, the Authority and the Selected Vendor will enter into the Vendor Lease Agreement that will grant to the Selected Vendor the exclusive right and obligation to install, maintain, and operate the System. Following the release of this RFP to prospective Vendors, the Authority will solicit Carriers who wish to provide wireless services within the System. Each interested Carrier then will be required to enter into a direct lease agreement with the Authority (the "Carrier Lease Agreements") to rent space in the System and an agreement with the Selected Vendor under which the Selected Vendor will provide System maintenance and repair for a fee payable to the Selected Vendor (the "Vendor Maintenance Agreements"). Pursuant to the Carrier Lease Agreements, the initial costs of System construction and installation will be funded by Carrier pre-payments to an account to be controlled by the Authority. Once the System is operational, the Carriers will be charged for their pro-rata share of System use, as such share is determined by the Authority. The Vendor Maintenance Agreements will establish the means by which the Carriers will reimburse the Selected Vendor for costs and expenses associated with System operation.

Sealed competitive lease proposals must be submitted by 12:00 p.m., local time, on August 22, 2002 at the Authority's offices at Ten Park Plaza, Suite 4160, Boston, Massachusetts. The Authority expects to make its preliminary designation of the Selected Vendor on September 12, 2002 and to enter into the Vendor Lease Agreement by October 4, 2002. Section V of this RFP includes a detailed schedule of the selection process.

The Authority makes no representation or warranty as to the absolute validity or reliability of any of the information contained in or furnished pursuant to this RFP, including, without limitation, Section II herein and all appendices. All interested Vendors should carefully review this RFP, particularly the Reservations and Conditions set forth in Section VI below.

B. Defined Terms

Throughout this RFP, the attached Appendices and Schedules, and subsequent documents related to this RFP process, the following terms shall have the meanings provided in the text, as referenced below.

- A. "Authority" as defined in Section I-A.
- B. "BTS" as defined in Section II-B.
- C. "CA/T Project" as defined in Section I-A.
- D. "Carrier" as defined in Section I-A.
- E. "Carrier Lease Agreements" as defined in Section I-A.
- F. "Carrier Maintenance Fee" as defined in Section III-B.
- G. "Central Artery Tunnels" as defined in Section I-A.
- H. "CO" as defined in Section II-B.
- I. "Enabling Act" as defined in Section I-A.
- J. "Fee Deposit" as defined in Section IV-D.
- K. "ICPS" as defined in Section II-C.
- L. "O&M" as defined in Section II-E.
- M. "RFP" as defined in Section I-A.
- N. "Selected Vendor" as defined in Section I-A.
- O. "Selected Vendor Payment" as defined in Section III-A.
- P. "System" as defined in Section I-A.
- Q. "Third Party Costs" as defined in Section IV-D.
- R. "TWT" as defined in Section II-A.
- S. "VB6" as defined in Section II-B.
- T. "Vendor" as defined in Section I-A.
- U. "Vendor Lease Agreement" as defined in Section I-A.
- V. "Vendor Maintenance Agreement" as defined in Section I-A.

C. Available CA/T Project Information

To facilitate Vendors' preparation of their design and financial proposals, the Authority has compiled schematic plans of each phase of the CA/T Project (Seaport Access Road, Central Artery Northbound and Central Artery Southbound). These 11 x 17 plans provide detailed information about each of the roadways and tunnels, including, but not limited to, interior conditions, utility locations, clearance heights and other dimensions. Requests for copies of these plans should be sent to Mr. Stephen J. Hines, Chief Development Officer, Massachusetts Turnpike Authority, Ten Park Plaza, Suite 4160, Boston, MA 02116, along with a separate check payable to the Massachusetts Turnpike Authority in the amount of \$500.00.

The Authority makes no representation or warranty as to the accuracy, completeness, currency, and or correctness of any of the information contained in or furnished pursuant to this RFP, including, without limitation, this Section I-C.

II SYSTEM REQUIREMENTS

It is the Authority's intent to provide a "state of the art" System within the Central Artery Tunnels that will support all current and future Carriers. The Authority believes that this approach best supports the operational functions of the Central Artery Tunnels, while cost effectively providing seamless wireless commercial Carrier signals throughout the Central Artery Tunnels. This approach eliminates multiple carrier systems, including equipment and antenna systems located throughout the Central Artery Tunnels and associated facilities, thus providing a cost-effective solution for all parties.

The CA/T Project consists of three (3) phases: the Seaport Access Roadway as Phase 1, the Northbound Artery as Phase 2, and the Southbound Artery as Phase 3. Depending on the design plans of the Selected Vendor and the requirements of the CA/T Project, preliminary design and installation of the System may be executed sequentially in order of phase number, or contemporaneously in two or more of any of the phases at once. The installation of the System must be closely coordinated with CA/T Project personnel and various other on-going construction contracts; CA/T Project work will always take precedence. It is the Authority's intent to have the installation of the System completed prior to the Central Artery Tunnels opening to vehicular traffic where feasible; however, the installation and operational testing of the System is dependant upon the scheduling of CA/T Project construction and completion activities and the Selected Vendor therefore should envision that installation of some or all of the System may occur after the opening of the Central Artery Tunnels to vehicular traffic.

The Central Artery Tunnels have certain constraints relating to the installation and operation of wireless communications equipment. These System Design Criteria have been created to guide prospective Vendors through these constraints in an effort to aid in the preparation of a preliminary design for submitting competitive lease proposals.

Throughout this process, the Authority encourages innovative design solutions supporting the overall goal of providing seamless commercial wireless coverage throughout the Central Artery Tunnels. Although a suggested approach to the System design is described, it is not necessarily required. **All Vendors must, however, provide a design based on the suggested criteria as described herein.** Vendors are encouraged to propose alternate designs, different than that described herein, that will enhance the operation or long-term functioning of the System. Any additional optional designs submitted should be marked as "Alternative Design(s)" and must clearly and specifically detail the areas differing from the suggested approach, including specific cost implications.

A. General Performance Criteria

1) Supported Systems. The System must support all currently existing and future licensed commercial wireless carriers in the Commonwealth of Massachusetts. The System also should support all current Cellular, PCS, and Paging type systems including, but not limited to, CDMA, TDMA, LMR, DCS, iDEN, GSM, and near future 3G systems using WCDMA and UMTS.

2) Public Safety/Potential Authority Uses. The Authority and other public agencies operate multiple public safety two-way radio systems throughout the Central Artery Tunnels. These systems support a number of Massachusetts agencies, as detailed in Appendix B. The Authority may request that some or all of the existing public safety two-way radio systems be carried on the System, if feasible and cost effective.

3) Interference. Communications supported by the System shall not interfere with existing and planned public safety two-way radio systems and AM/FM Rebroadcast systems (see Appendix B). The physical location of System

equipment and appurtenances must be designed to avoid any interference with CA/T Project equipment. CA/T Project operation and maintenance personnel must have clear access to all CA/T Project equipment and appurtenances at all times.

If intermodulation or interference between any of the Carrier frequencies and any other Carrier frequency or any existing or planned System results, the Selected Vendor must specifically identify the problem and recommend a solution to eliminate the interference. The Selected Vendor must provide a complete copy of any interference studies, test plans and evaluation test reports to the Authority Communications Division, together with a description, specification and identification of the equipment to eliminate mutual RF interference, as applicable, prior to installation or operation of the equipment. The installation shall be tested to demonstrate that no mutual RF interference exists.

If, at any time, the System interferes with the operation of any existing or planned CA/T Project public safety two-way radio and/or AM/FM Rebroadcast systems, as determined by mutual cooperation between the Authority and the Selected Vendor, the System or the entire System, if a component cannot be immediately identified, must be shut down immediately. Identification of the interfering component must be corrected to the satisfaction of the Authority prior to the System (or System component) being placed back in operation. The Selected Vendor shall bear sole responsibility and all liability for any interference with public safety two-way radio systems, and with licensed commercial wireless carrier systems.

The Selected Vendor should be cognizant of studies and recommendations published by the FCC-sponsored task force of the Association of Public Safety Communications Officials (APCO) teamed with cellular industry organizations, concerning mutual interference between public safety and commercial wireless services (APCO Project 39).

4) Mutual RF interference study. The Selected Vendor will be required to complete a Mutual RF interference study. The study must consider spurious and intermodulation products, noise, signal desensitization and in-band and out-of-band rejection that could cause interference of the frequencies carried on the System with the existing and planned CA/T Project public safety two-way radio and AM/FM Rebroadcast systems, and of the existing and planned CA/T Project public safety two-way radio and AM/FM Rebroadcast systems to frequencies carried on the System, and between each of the frequencies carried on the System over the full dynamic operating range of all systems. Analytical results must be supplemented with supporting experimental data. The Selected Vendor must consider and specifically identify potential mutual interference problems and recommend and implement practical and cost-effective solutions to eliminate mutual interference as part of the Selected Vendor's proposed solution to assure that no interference will occur in the installed systems.

5) Preventive maintenance program. The Selected Vendor must propose a diagnostic and preventative maintenance program to maintain continuous operation, free from mutual interference as the System ages. This program shall perform periodic diagnostics to identify potential problems due to aging and corrosion, with corrective action that must be taken immediately to prevent such problems from causing substandard performance and undesirable interference. Such diagnostics shall be automated to the extent practical, using built-in test equipment and computer-aided testing and reporting (e.g., using a portable computer in conjunction with a RF communications multipurpose tester). Ease of performing diagnostics and preventative maintenance, and training personnel in the proposed maintenance program shall be an important consideration.

6) Future Expansion. The System must be able to expand to accommodate future Carriers and services, including, but not limited to, 3G (WCDMA and UMTS), 802.11, HyperLAN and Bluetooth, without overhauling or completely replacing the initial equipment. Any approach that requires complete replacement of the initial equipment or costly additional equipment to support future expansion will not be considered. Additionally, the Authority may expand its existing ethernet Wide Area Network with secure wireless extensions, providing employees with wireless network access from the Central Artery Tunnels. The System should also be designed with sufficient flexibility to accommodate any future expansion into the Ted Williams Tunnel ("TWT"), Prudential, and CANA Tunnels.

B. The Central Office Approach

It is not the Authority's intent to design the System for the Vendor, but rather to provide guidance for the design based on the Authority's public safety responsibilities and the operational and maintenance requirements of the Central Artery Tunnels. The Authority suggests a "Central Office" ("CO") approach in support of the main System equipment and the Carriers' equipment. Locating both the main System equipment and Carrier Base Transceiver Station ("BTS") equipment in a single location provides numerous benefits. The CO approach eliminates multiple locations of Carrier BTS equipment, improves access and security to the System and equipment, concentrates power and telecommunications requirements to a single location, while establishing a cost-effective solution for all parties. As noted above, while the Authority invites Vendors to submit alternative design proposals, all Vendors must submit a base proposal based on the criteria detailed below.

1) Ventilation Building 6. The Authority suggests Ventilation Building 6 ("VB6") as the proposed CO location because it provides many benefits to the installation and completion of this project. This location has been in operation for a number of years and currently houses four Carriers' BTS equipment. Power and telecommunications connections are readily available and space for equipment installation is abundant. Additionally, System installation can proceed immediately, as construction of this location is complete and this facility is operated by the Authority and not otherwise a part of the CA/T Project. However, other vent buildings are available, as described in Appendix A, and may be used to house System equipment. In the event that the Authority determines based upon a field investigation that VB6 is not feasible, the CO may be located in another vent building if the Authority determines that sufficient space exists in such building and access to it is feasible. The Authority must approve the location and installation of all equipment.

a. Facility

The Authority suggests that the CO be located in the subbasement of VB6, located at the South Boston entrance to the TWT. The proposed location provides 3,475 square feet of space for equipment installation and currently houses four (4) commercial Carrier systems, providing commercial wireless coverage for the TWT. Two (2) additional commercial Carriers have been approved for future installation. The existing Carriers' equipment located in VB6 is housed in caged equipment areas that vary in size. The existing Carriers currently occupy 1,211 square feet of the subbasement. The Authority will allow the Selected Vendor to install the main System equipment within a section of the remaining space in the subbasement area. The Selected Vendor will be required to construct a designated caged area within this space, to separate and protect this equipment.

b. Power & Telecommunications Connections

Power and telecommunications connections have been provided to VB6 to support the existing Carrier equipment. A sub-meter panel is provided to support each existing Carrier equipment within the space. The sub-metered location is fed from the main electrical switchgear room and supplies 400amps to the sub-meter panel. Currently there are two unused sub-meter locations on this panel, rated at 200amps each. The Authority assumes that the two additional Carriers approved to install equipment in this facility will utilize the remaining available sub-meter locations. Therefore, the Selected Vendor will be required to design and install a new service from the existing Authority switch gear to the Selected Vendor equipment area.

The Selected Vendor must calculate the required load for the main neutral equipment, verifying that the load of this equipment can be successfully supported by the Authority's switch gear. The Selected Vendor will be required to provide an energy efficient system to minimize the consumption of power. The load calculations must be stamped and submitted to the Authority by a Professional Electrical Engineer registered in the Commonwealth of Massachusetts. The Authority will review the calculations and provide written approval to proceed, if the calculations are verified correct.

Generator back-up power is not provided to this area. The Authority requires that all System equipment operate continuously in the event of a commercial power loss. The Selected Vendor must provide back-up

power to support the System equipment for a minimum of two hours, if commercial power to the equipment fails.

Conduit and cable must be installed per all applicable codes. The Selected Vendor will be responsible for all permitting required for this installation.

Telecommunications facilities within VB6 are currently supplied by Verizon. Verizon has installed a DS3 in the communications room on the Mezzanine level of VB6. Verizon supplies the T1 cabling from the mezzanine level to the demarcation in the subbasement level. The Selected Vendor will be responsible for ordering, scheduling, and paying for all telephone circuits associated with the successful installation and operation of the System.

c. Heating, Ventilation & Air Conditioning (HVAC)

The proposed equipment space within VB6 is not environmentally conditioned space, and no HVAC is provided. The Selected Vendor is responsible for providing all HVAC to the main equipment area, if required. In the event HVAC is necessary, the Authority prefers the use of outdoor equipment cabinets, equipped with their own HVAC, to house the main equipment. Construction of an equipment room, complete with HVAC will be considered; however, the Authority believes this will be a cost prohibitive approach. The Selected Vendor will be responsible for ensuring that heat released into Authority facilities does not affect the operation of said facilities and will be required to provide ventilation if required. The Selected Vendor will also be responsible for all permitting required for this installation.

d. Tunnel Access

Conduit pathways exist from the subbasement of VB6 to the tunnel communication conduit system. The Authority will allow the Selected Vendor use of a conduit, providing access from VB6 to the tunnel communication conduit. The Selected Vendor will be responsible for verifying available conduit, placing one innerduct in said conduit, pulling fiber optic cable, splicing cable, and providing the material, hardware, and labor necessary for a complete installation. Vendors must be prepared to supply and install rigid galvanized steel conduit and/or fiberglass reinforced epoxy conduit in the event an existing conduit is blocked or space not available.

In addition, if rooftop access is required for placement of antenna for stratum timing, etc., the antenna could be located on the roof of the vent building. Conduit pathways exist from the subbasement to the rooftop, and the Authority will allow the Selected Vendor to utilize a conduit for this purpose.

C. Remote Equipment

Throughout the tunnel complex, cross passages and utility rooms exist approximately every 300 to 600 feet. The Authority will allow remote equipment to be located within these rooms as necessary, provided that proper space and utilities exist to support such equipment. The intent of the remote equipment design is to utilize fiber optic cable as the interface to the main equipment. The remote equipment will convert the optical signal back to electrical signals to be interfaced to an antenna system.

1) Facilities – Utility Rooms & Cross Passages. Utility rooms are used to support remote Integrated Project Control System (“IPCS”) equipment that provides monitoring and control of vehicular traffic through the Central Artery Tunnels. Cross passages are provided to afford patrons the ability to safely cross between roadways in the event of an emergency.

Each utility room is unique in the type and quantity of equipment it houses. Utility rooms are the preferred equipment location due to the presence of AC power and access control to the rooms. In exceptional cases, cross passages may be used if necessary; however, power is not present in these locations. The utility rooms are

considered wet locations, with temperature and humidity ranges that approach outdoor conditions; therefore, equipment installed in these rooms must be located within weatherproof enclosures.

2) Power. In general, each utility room is supplied with 120/208V, 3 phase, 4W, 100A, 42 circuit panel. [m1]The Authority will allow the Selected Vendor to use available breaker positions within this panel only after the Selected Vendor calculates the required load for the remote equipment, verifying that the load of this equipment can be successfully supported using the existing capacity of the feed to this location. The load calculations must be stamped and submitted to the Authority by a Professional Electrical Engineer registered in the Commonwealth of Massachusetts. The Authority will review the calculations and provide written approval to proceed, providing that the calculations are verified correct. The Selected Vendor will be required to provide an energy efficient system to minimize the consumption of power.

Generator back-up power is not provided to the utility rooms. The Authority requires that all System equipment operate continuously in the event of a commercial power loss. The Selected Vendor must provide back-up power to support the System equipment for a minimum of two hours, if commercial power to the equipment fails.

Conduit and cable must be installed per all applicable codes. The Selected Vendor will be responsible for all permitting required as part of this installation.

3) Tunnel Access. Access to the utility rooms from the communications conduit in the roadway is provided via pullboxes in the median walkway. The Selected Vendor will utilize an existing spare conduit from the pullboxes into the utility rooms. The Selected Vendor will be responsible for verifying available conduit, installing one innerduct in said conduit, pulling fiber optic cable, splicing, and testing the cable as necessary for a complete installation.

D. Antenna System

Prospective Vendors are required to design an antenna system that will provide seamless commercial wireless coverage throughout the Central Artery Tunnels and ramp sections. An antenna system that minimizes installation of a multitude of single antennae for individual Carrier signals is required.

Access to the Central Artery Tunnels from the utility rooms must be accomplished with a core bore through the utility room wall. Prior to coring, rebar mapping must be completed at all core bore locations via x-ray or other reasonable means. All cores must be approved by the Authority prior to construction. The Selected Vendor will be responsible for verifying all penetration locations, installing conduit, placing pull rope, pulling cable, testing, and furnishing all material and equipment necessary for a complete installation.

E. Monitoring and Control

All equipment proposed for use on the System must have monitoring and control capabilities. The equipment must be capable of monitoring the operation and/or failure of all main and remote equipment to the circuit pack level (if applicable). This monitoring function must be provided locally within the CO equipment area, as well as from a remote location, to assure proper operation and failure notification. If a fault occurs within any component of the System, the System equipment must recognize and report the failure to the Operation and Maintenance ("O&M") personnel of the Selected Vendor's team within a reasonable amount of time, mutually agreed upon by the Selected Vendor and the Authority. System equipment with remote control capabilities is desired, in order to provide the Selected Vendor's O&M personnel with remote diagnostic control and adjustment capabilities.

F. Redundancy

The Authority prefers a System design that provides (or is capable to provide) fully redundant protection against System failure. At a minimum, the System design shall provide minimum or partial redundancy for all primary operating functions which include, without limitation, the power supplies and all monitor and control functions.

G. Operation & Maintenance

The Selected Vendor will be responsible for 24 hours per day, seven days per week, 365 days per year operation and maintenance of all System equipment. The Selected Vendor will be required to monitor the entire System and its components to ensure continuous operation. If a fault occurs within any component of the System, the System equipment must recognize and report the failure to the O&M personnel of the Selected Vendor's team within a reasonable amount of time, mutually agreed upon by the Selected Vendor and the Authority. Maintenance personnel must be dispatched to the failure location and arrive within one hour from the time the failure is reported.

The Selected Vendor must locally (within one hour's driving time) stock spare parts for repair of failed System equipment, including the antenna system. At no time shall any component failure cause the System to be down for more than two hours.

H. Conduit

Pursuant to Authority guidelines, only galvanized steel or fiberglass reinforced epoxy conduits are allowed in tunnel areas and confined space areas. Conduit and cable must be installed per all applicable codes. The Selected Vendor will be responsible for all permitting required for this installation.

I. Tunnel Hardware

Hardware and mounting material installed in the tunnel areas must be galvanized steel or Type 304 stainless steel. Type 304 stainless steel is preferred.

III VENDOR AGREEMENTS

Pursuant to section 4(m) of the Enabling Act, the Authority has the power to grant permission to any public utility, corporation, or person to place and maintain on, under, or within the Turnpike or Metropolitan Highway System conduits, cables, wires, towers, or other structures which do not interfere with the operation and maintenance of the Turnpike or Metropolitan Highway System and to contract for such permission on such terms and conditions as may be fixed by the Authority. The Authority will enter into the Vendor Lease Agreement with the Selected Vendor that will provide the Selected Vendor with the exclusive right and obligation to install, maintain, and operate the System in the Central Artery Tunnels. The Selected Vendor and each Carrier will enter into a Vendor Maintenance Agreement acceptable to the Authority under which the Selected Vendor will provide System maintenance and repair for a fee payable to the Selected Vendor. The Authority reserves its right to negotiate and/or change all terms of the Vendor Lease Agreement and/or the Vendor Maintenance Agreements prior to execution.

A. Vendor/Authority Lease Agreement

The Vendor Lease Agreement will include, but not be limited to, the terms and conditions listed below and otherwise shall be satisfactory to the Authority. All terms described herein are subject to further negotiation.

- 1) **System.** The Selected Vendor shall design, construct, and install the System in accordance with the System Design Criteria set forth in Section II of this RFP and the System design set forth in its competitive lease proposal. Completion of construction shall occur as soon as possible under the circumstances and pursuant to a schedule acceptable to the Authority.
- 2) **Monitoring.** The System shall provide the Authority and Carriers with regular and accurate reports of System failures and measures taken to repair such failures. The Selected Vendor shall be responsible for providing monitoring and reporting independent of the Carriers.
- 3) **Budget.** The Vendor Lease Agreement shall specify a maximum cost for the initial installation of the System. Such costs shall include, without limitation, all costs for the purchase of all related equipment, labor costs, and fees due Selected Vendor for performing the contemplated work. Such costs shall be set forth in an itemized line item budget acceptable to the Authority. No amounts may be moved from one line item to another without the Authority's consent.
- 4) **System Construction Funding.** Initial System costs shall be funded by Carrier pre-payments under the Carrier Lease Agreements into Authority-controlled escrow accounts. So long as no default exists under the Vendor Lease Agreement, the Authority shall make periodic distributions to the Selected Vendor on account of such costs upon 50%, 75% and 100% completion of work for each phase, as determined by the Authority following receipt of third party certifications acceptable to it respecting same.
- 5) **Owner representative.** The Authority shall designate an Owner Representative to supervise the construction and operation of the System by the Selected Vendor and its contractors. All costs associated with such Owner Representative shall be funded by the Selected Vendor.
- 6) **System upgrades.** The Selected Vendor shall keep and maintain the System in first-class operating condition at all times during the term of the Vendor Lease Agreement, including System upgrades as necessary. Capital upgrades to the System shall be funded by the Carriers and the costs reimbursed to the Selected Vendor, in the same manner as initial System funding.

- 7) **Maintenance and Repair.** The Selected Vendor shall be responsible for maintaining and repairing the System. All costs and expenses incurred by the Selected Vendor in connection therewith shall be the sole responsibility of the Carriers, and shall be paid to the Selected Vendor by the Carriers under the Vendor Maintenance Agreements described in Section III-B below. The Selected Vendor may subcontract its maintenance and repair responsibilities under the Vendor Lease Agreement to a third party reasonably acceptable to the Authority. The Authority shall have the right to terminate the Selected Vendor's maintenance and repair responsibilities at any time upon a default or breach of its obligations under the Vendor Lease Agreement and replace same with a party acceptable to the Authority. If the Selected Vendor has documented that any persistent failures of the System are the result of a particular Carrier's equipment, such Carrier will be responsible for any associated repair costs.
- 8) **Term.** The initial term of the Vendor Lease Agreement shall be ten (10) years. At the Authority's option, the Agreement may be renewed for two (2) additional five (5) year terms.
- 9) **Utilities and telecommunications.** The Selected Vendor shall be responsible for obtaining and funding utility and telecommunications services (including installation and recurring fees) and connections for the System, and for any permits related to utilities and telecommunication services. Wherever possible, the Selected Vendor shall provide for separately metered services for all Carriers to allow for direct billing.
- 10) **Performance guaranties.** The Selected Vendor shall provide to the Authority a performance bond, letter of credit or other third party guaranty at the Authority's sole discretion to ensure the successful completion of all System work and the performance of the Vendor's repair and maintenance obligations under the Vendor Lease Agreement.
- 11) **Additional Carriers.** The Authority reserves the right to require accommodation of additional Carriers in the System to the extent technically feasible. The Authority reserves the right to require accommodation of any public safety or other Authority use on the System if technically feasible and will not interfere with existing Carrier services. The Authority reserves the right to require an expansion of the System if necessary to accommodate additional Carriers or other users.
- 12) **Restrictions.** The Selected Vendor shall not provide wireless telephone service to customers, sublease any rights to use the System, assign its ownership or other rights in the System, or contract with any third parties to allow them to use the System.
- 13) **Contingency.** In the event that the Authority fails to sign Carrier Lease Agreements with Carriers willing to fund into escrow the aggregate System construction costs, or if the Authority signs such Agreements with such Carriers but any or all of the Carriers fail to fund their share of such costs, then, in either case, the Authority may elect to terminate the Vendor Lease Agreement. In such circumstances, the Fee Deposit described in Section IV-D below shall not be refundable to the Selected Vendor. Commencement of initial System construction shall not occur until the Authority has delivered a written Notice to Proceed, waiving the foregoing termination right. In the event that the Authority has not delivered such Notice to Proceed and waived such right in writing by a date mutually acceptable to the Authority and the Selected Vendor, then the Selected Vendor shall have the right to terminate the Vendor Lease Agreement as its sole right or remedy.
- 14) **Selected Vendor Payment.** Within ten (10) days of the Authority's delivery of a written Notice to Proceed with System construction, the Selected Vendor shall provide a payment (the "Selected Vendor Payment") of Two Hundred Fifty Thousand Dollars (\$250,000.00) to the Authority in the form of a bank, cashier's or certified check drawn on a Massachusetts bank without intervening endorsement payable to the "Massachusetts Turnpike Authority." This one-time payment shall be deemed fully earned by the Authority and non-refundable.
- 15) **Compensation to the Authority.** Other than the Selected Vendor Payment, no compensation shall be due from the Selected Vendor to the Authority.

- 16) **Ownership of System.** During the term of the Vendor Lease Agreement, the System and all subsequent improvements to the System shall be owned by the Selected Vendor. At the end of such term, ownership of the System shall revert to the Authority.
- 17) **Leased Premises.** The Vendor Lease Agreement shall include a lease of space sufficient to enable the Selected Vendor to install, operate, and maintain the System.
- 18) **Taxes.** The Vendor shall pay and discharge all taxes, assessments, levies, excises or other charges imposed by any lawful authority (other than the Authority) arising from the System or the grant of rights and obligations to the Selected Vendor (other than any tax on the income of the Authority).
- 19) **Insurance.** The Selected Vendor shall maintain insurance policies in full force, at its expense, and in amounts, deductibles, and type to be specified by the Authority in the Vendor Lease Agreement, which shall include without limitation, Commercial General Liability, Workers' Compensation, Umbrella Liability, Business Interruption, and Property Insurance. All contractors also shall furnish Certificates of Insurance throughout the term of the Vendor Lease Agreement, and the Authority shall be named as an additional insured.
- 20) **Indemnification and Hazardous Materials.** The Selected Vendor shall indemnify, defend, and hold harmless the Authority against all claims or liabilities that arise during the term of the Vendor Lease Agreement, including without limitation, any claims related to hazardous materials. It shall be the responsibility of the Selected Vendor to respond to any releases of hazardous materials during the term of the Vendor Lease Agreement.
- 21) **Access and Inspection.** The Authority shall retain the right to enter upon any part of the System at any time, with or without notice, for any purposes whatsoever, including, but not limited to, inspection of the System or maintenance of highway facilities.
- 22) **Cooperation and Non-Interference with CA/T Project.** The Selected Vendor shall work closely with CA/T Project personnel and CA/T Project contractors to insure that System construction, installation, and operation do not interfere with CA/T Project construction and completion activities. In the event of a conflict, CA/T Project work will take precedence over the Selected Vendor's work on the System.
- 23) **Compliance with Regulations.** In the design, construction, installation, and maintenance of the System, the Selected Vendor shall comply with all applicable federal, state, and local laws, rules and regulations.
- 24) **Civil Rights Requirements.** The Selected Vendor shall comply with the Authority's policies and procedures supporting affirmative action, diversity in the workplace, and affirmative market contracting in the design, construction, operation, and maintenance of the System.

B. Carrier/Vendor Maintenance Agreements

The Selected Vendor and each individual Carrier will be required to enter into the Vendor Maintenance Agreement in a form to be provided by the Authority that will provide that the Selected Vendor will maintain and repair the System for a fee payable by the Carriers. The Vendor Maintenance Agreements will include, but not be limited to, the following terms and conditions.

- 1) **Vendor responsibilities.** The Vendor Maintenance Agreements will detail the Selected Vendor's maintenance and repair responsibilities respecting the System. Except as provided in the Vendor Lease Agreement, the Selected Vendor shall not be permitted to terminate service to any Carrier without the Authority's approval and specific cause.
- 2) **Vendor costs and fees.** Each Carrier shall be required to pay an annual fee (the "Carrier Maintenance Fee") for operation and maintenance of the System. Carrier Maintenance Fees shall be based on a formula established in

all agreements that will provide the Selected Vendor with a reasonable payment for its costs and level of activity. Carrier Maintenance Fees shall be subject to annual approval by the Authority.

- 3) **Term.** The Vendor Maintenance Agreements shall be coterminous with the Vendor Lease Agreement.

Prospective Vendors are encouraged to provide a suggested form of maintenance agreement to the Authority for its consideration at the time that they make their submissions to the Authority. The Authority shall be under no obligation to use any such agreement submitted to it.

IV VENDOR SUBMISSION REQUIREMENTS

A. General

Proposal should be addressed to:

Mr. Stephen J. Hines
Chief Development Officer
Massachusetts Turnpike Authority
Ten Park Plaza, Suite 4160
Boston, MA 02116

CA/T Wireless Proposals - Vendor

Each proposal must be accompanied by the Fee Deposit and financial assurance information described in Section IV of this RFP. Proposals submitted must be complete and contain all required forms and information. No changes, additions or supplements to proposals will be accepted after a proposal is submitted, unless specifically requested or allowed by the Authority. Proposals must be received by the Authority's Chief Development Officer at Ten Park Plaza, Suite 4160, Boston, Massachusetts by **12 noon, local time, August 22, 2002**. All proposals must be sealed to provide confidentiality of the information and to ensure that the proposals remain intact. Once submitted to the Authority, all proposals and accompanying materials become irrevocable and the sole property of the Authority. All proposals are subject to the reservations and conditions specified in Section VI of this RFP.

B. Proposal Format

Each proposal package must address all of the submission requirements called for in this RFP, and must be in the format specified. Prospective Vendors must complete all of the schedules included in this RFP including, without limitation, the Financial Proposal Form included as Schedule A, and provide all requested information.

1) **Components.** All proposals must be submitted in separate components, described in detail in the following sections of this RFP. Each component should be separately bound and should clearly identify the Vendor by name and the component name. The contents of each component shall be:

- a. Component I: Executive Summary
- b. Component II: System Design
 - i. Compliance with System Design Criteria
 - ii. Preliminary Plans
- c. Component III: Financial Information
- d. Component IV: Non-Financial Information
- e. Component V: Legal Information
- f. Component VI: Fee Deposit

2) **Page limits.** Components I, III, and IV should be a succinct presentation of the essential elements of each element of the proposal, while lengthier design information should be presented in the System Design Component. Proposals must not exceed the following maximum page limits for each component. In counting pages, each printed side of a sheet of paper shall be counted as a single page.

- a. Component I: Executive Summary: This component must be no more than two (2) pages in length.
- b. Component II: System Design: This component must be no more than forty (40) pages in length, including all text, but exclusive of the required drawings that must be bound with this component. Drawings must be limited to the format described below.
- c. Component III: Financial Information: This component must be no more than five (5) pages in length, exclusive of the Financial Proposal Form that must be bound with this component.
- d. Component IV: Non-Financial Information: This component must be no more than five (5) pages in length.

3) **Copies.** For components I-V, fifteen (15) complete, bound copies of each component must be submitted. In addition, one unbound, black-and-white copy, suitable for photocopying, of components I-V must be submitted.

4) **Drawings.** All drawings must be submitted in AutoCAD 2000 format and in both hard copy and electronic media (CD). The hard copies of the drawings must be bound with the System Design component.

5) **Forms.** Required forms are provided in the Schedules included in this RFP. All forms must be bound with the proposal.

Any Vendor who elects to submit an alternative System design in addition to the suggested design must present such proposal in the format specified above, with all deviations from the design suggested in this RFP specifically noted.

C. Proposal Content

Each proposal must address all of the submission requirements of this RFP, and must be in the format specified. Prospective Vendors must complete all of the schedules included in this RFP and provide all requested information. Respondents are encouraged to address the submission requirements directly and in a straight-forward manner.

1) **Executive Summary.** This component must be a two-page summary of the proposed System design and specifications and describe how the proposed System will support all major Carriers and the needs of the Authority as described in Section II of this RFP.

2) **Compliance with System Design Criteria.**

a. **Public Safety and Related Authority Uses.** Proposals must address how the System will support the Authority's and other agencies' public safety two-way radio systems, as detailed in Appendix B, indicating the specific equipment modifications or additions that will be required.

b. **System Interference.** The physical location and operation of System equipment and appurtenances must not interfere with any CA/T Project equipment or the operation of the CA/T Project systems. To ensure that its proposed System adequately addresses these issues, prospective Vendors must submit the following information:

- i. **Mutual RF Interference study.** Prospective Vendors must detail their plans for conducting a Mutual RF Interference study, as described in Section II-A of this RFP. Such description should discuss the tools

the Vendor would employ in the study, the Vendor's past experience conducting similar studies, how the results of the study would influence the Vendor's proposed System design, the format in which the Vendor would present its study results to the Authority, and a timeframe for completion of the study.

ii. **Evaluation plan.** Prospective Vendors must propose a phase-in evaluation plan to assure that added Carriers that are brought on-line in the future do not interfere with the existing services, and that the existing services do not interfere with the added Carriers. Prospective Vendors must demonstrate prior experience with solving similar mutual RF interference problems in tunnel roadways for the wireless technologies involved in this project.

c. **Accommodation of Future Expansion.** Prospective Vendors must describe how the proposed System will support future services as described in Section II-A.4 of this RFP and the expansion of the Authority's existing ethernet Wide Area Network to provide employees with wireless network access from the Central Artery Tunnels.

d. **HVAC System.** Prospective Vendors must describe their proposal for providing HVAC to the System. Respondents must also satisfactorily address the heat rejected to Authority facilities and propose an arrangement that rejects the excessive heat to outside of Authority facilities. Prospective Vendors must provide the Authority with the appropriate calculations documenting the rejected heat of the equipment and its effect on the room in which the equipment will be located.

e. **Energy Efficiency.** The Selected Vendor will be required to provide an energy efficient system to minimize the consumption of power. Specifications for each proposed piece of equipment, indicating its power requirements, must be submitted as part of the proposal.

f. **Monitoring and Control Capabilities.** Prospective Vendors must describe the extent of the proposed System's remote monitoring, diagnostic control, and adjustment capabilities.

g. **System Redundancy.** Prospective Vendors should detail the extent of the proposed System's redundant protection.

3) System Design.

a. **Preliminary Design Plans.** All prospective Vendors must submit preliminary design plans. The plans must be created for each phase of the project, as described in Appendix A. These plans should provide sufficient information to show, at a minimum, the design concept, equipment locations and their space requirements, power requirements for each location, antenna system (type, locations and typical required mounting), interface points, fiber optic locations (type, count and splice locations), and telecommunications interface.

4) Financial Information.

a. **Proposal Form.** Prospective Vendors must submit a completed Financial Proposal Form, included in this RFP as Schedule A. Prospective Vendors who wish to propose alternative System designs must submit a separate Financial Proposal Form for each design submitted, including without limitation, the design suggested in Section II of this RFP. With respect to alternative design proposals, prospective Vendors may modify the Financial Proposal Form as necessary, but at a minimum must provide a guaranteed maximum System cost figure. Prospective Vendors should indicate the following information in the appropriate places on the Financial Proposal Form:

i. **System costs:** The proposal should include a detailed projection of costs to construct the System, including the following:

aa. **Guaranteed Maximum System Price:** a guaranteed maximum price for System construction.

bb. **Central Office Design/Construction:** all costs of the design, equipment, material and labor required to provide a complete installation of the main equipment and appurtenances, including, but not limited to, the costs of equipment racks, panels, cable tray, fiber trough, conduit, cable, and hardware.

cc. **Vent Building 6 Construction:** all costs of the design, equipment, material, and labor required to construct a caged area to protect the existing Vendor equipment in Vent Building 6.

dd. **Vent Building 6 Power Installation:** all costs of installing power for the CO, including design and installation costs, labor, and equipment including, but not limited to, conduit, wire, ground bars, hardware, transformers, sub-meters, and circuit panels.

ee. **Telephone Line Installation:** all costs for installing all telephone circuits necessary to support System equipment and equipment area.

ff. **HVAC:** all costs of material and labor to install HVAC in the main equipment area, if required.

gg. **Vent Building 6 Tunnel Access:** all costs of material and labor associated with a complete installation for providing access from Vent Building 6 to the tunnel communication conduit and into utility rooms, including, but not limited to, costs for verifying available conduit, locating an innerduct in the available conduit, and pulling and splicing fiber optic cable. Prospective Vendors must also supply a "unit price per foot" for installation of rigid galvanized steel conduit and a "unit price per foot" for fiberglass reinforced epoxy conduit to be used in the event that existing conduit is blocked or space is not available.

hh. **Utility Room Design/Construction:** all costs of the design, equipment, material and labor necessary to provide a complete installation of remote equipment for all proposed utility rooms and/or cross passages.

ii. **Utility Room Power Installation:** all costs of installing power for all proposed utility rooms and/or cross passages, including design and installation, labor, and equipment, including, but not limited to, conduit, wire, ground bars, hardware, transformers, sub-meters, and circuit panels and backup power.

jj. **Utility Room Tunnel Access:** all costs of material and labor associated with a complete installation for providing access from all proposed utility rooms and/or cross passages to the tunnel communication conduit, including, but not limited to, costs for verifying available conduit, locating an innerduct in the available conduit, pulling and splicing fiber optic cable, and coring utility room walls to provide access to the tunnel roadway.

kk. **Public Safety:** all costs associated with carrying Authority and other public agencies' public safety two-way radio systems, including, but not limited to, costs for additional engineering, equipment, installation, power, backup power, and telephone circuits.

ll. **Remote Control/Monitoring:** all costs associated with the design and installation of the proposed System's remote control capabilities, including, but not limited to, communication line costs, recurring fees, and costs of equipment, design, and installation.

mm. **Redundancy:** all costs associated with equipment necessary to provide redundant protection for primary System operating functions.

nn. **Turn-up, Testing and Commissioning:** all costs associated with the turn-up, testing and commissioning of the System, including, but not limited to, interference testing and verification, fiber loss testing, equipment functional testing and fail over testing.

NOTE: In calculating the costs of constructing the System, prospective Vendors should take into account the fact that due to ongoing construction in the Central Artery Tunnels, the hours during which the Central Artery Tunnels will be available to the Selected Vendor for construction may be restricted and the Selected Vendor may be required to perform some, if not all, of the System construction and installation during nighttime hours. In addition, the Selected Vendor may be required to construct and install the System with live traffic in the Central Artery Tunnels. Prospective Vendors are advised to prepare their budgets and financial proposals accordingly.

ii. **Operation Costs:** The proposal should include a detailed projection of costs of operating and maintaining the System, including the following:

aa. **Maintenance/Repair:** all projected annual costs of equipment and labor required to maintain and repair the System for the term of the Vendor Lease Agreement.

bb. **Utilities:** annual costs of utility service to support the System for the term of the Vendor Lease Agreement.

cc. **Future Capital Upgrades:** all projected annual costs of equipment and labor required to maintain the System in first-class working order, including any foreseeable upgrades, for the term of the Vendor Lease Agreement.

iii. **Vendor Fees:** The proposal should provide a projected cash flow for Vendor fees over the term of the Vendor Lease Agreement. Prospective Vendors should state clearly any escalation factors or other assumptions that affect the projection.

b. Financial Questions. The proposal must answer the following questions. Note that "Bankruptcy" as used below includes any bankruptcy, reorganization, arrangement, composition, readjustment, liquidation, dissolution or other relief for debtors under any present or future federal, state or other statute, law or regulation (including, without limitation, the present federal bankruptcy act). If the answer to any of these questions is "yes", please describe the circumstances in detail.

i. Has Respondent ever voluntarily filed for Bankruptcy protection, been the subject of an involuntary Bankruptcy proceeding, made an assignment (or taken similar action) for the benefit of its creditors, admitted or failed to contest the material allegations of any petition in Bankruptcy, sought or acquiesced in the appointment of any trustee, receiver, conservator or liquidator of the Respondent or any of any of its assets or properties, or been declared bankrupt or insolvent by any court?

ii. Has Respondent ever been prohibited, restrained or limited from doing business with a governmental or public agency?

iii. Has Respondent ever been indicted for or convicted of a felony?

iv. Has Respondent ever defaulted on a loan?

v. Has Respondent ever been in default of a ground or other lease or had a ground or other lease terminated for Respondent's failure to comply with the terms of the lease?

c. Vendor Financial Information.

- a. The proposal package must include documentation to evidence the Vendor's financial capabilities.
 - If the Vendor or any entity owning five percent (5%) or more of an equity interest in the Vendor is a publicly-held entity, this evidence should include consolidated financial statements as submitted to the Securities and Exchange Commission on Form 10K for the last two fiscal years.
 - If the Vendor or any entity owning five percent (5%) or more of an equity interest in the Vendor is a privately held or not-for-profit organization, this evidence should include, as applicable: balance sheets for the last two fiscal years (all financial statements provided in the proposal should be certified); a statement of income for the last two fiscal years; and a management discussion and analysis of the organization's financial condition for the last two fiscal years indicating any changes in the organization's financial position since the financial statements were prepared.
- b. The proposal package must include documentation to evidence the Vendor's ability to pay the proposed maximum System cost, all sources of financing, and/or any commitment letter(s) from financial institutions or other lenders.

5) Non-financial Information.

- a. **Vendor.** Prospective Vendors should include a description of the Vendor entity, including the type of entity, all of its officers and, if not publicly traded, its shareholders holding a 5% or greater interest in the entity. The proposal should also provide a summary of relevant past projects and experience of similar scale and type and references from client-owners of systems that the Vendor entity has previously constructed, installed, operated, and/or maintained.
- b. **Vendor Team.** Prospective Vendors should identify all members of the Vendor team, including consultants, contractors, subcontractors, and equipment providers. For each team member, Vendor should provide a company profile, examples of similar projects, a description of the firm's role in that project, and the names of senior management who will be assigned to this project. The proposal should specifically highlight relevant experience by team members, including past experience of the senior management proposed for this project, in carrier-neutral wireless telephone system design, installation, and maintenance. Resumes of all relevant senior management should be included with the proposal.
- c. **Schedule.** The proposal should provide a summary of the schedule for installing each phase of the System (Seaport Access Road, Northbound Central Artery, Southbound Central Artery), including the projected time for design and construction of each phase.
- d. **System Management.** The proposal should contain a description of how ongoing System management and maintenance (scheduled and unscheduled) will be provided, including the specific roles of the Vendor and any subcontractors that will provide System management. Scheduled maintenance should include, without limitation, the following activities: (i) patrol of the route of System on a regularly scheduled basis; (ii) operation of a manned network control center 24 hours a day, seven days a week that monitors the System by means of remote surveillance equipment and dispatches maintenance and repair personnel to handle and repair problems detected by such center or reported by the Authority or other parties and to which the Authority and the Carriers shall be provided a toll free number; and (iii) such other activities that hereafter become industry standard scheduled maintenance and repair activities for the transmission of communication services. The proposal also should describe how the Selected Vendor will log its reports of the need for maintenance and repair of the System (whether from the Authority, a Carrier or other third party), verify the problem and dispatch personnel as soon as reasonably possible to take corrective action which action thereafter shall be diligently undertaken by the Selected Vendor and completed as soon as reasonably possible under the circumstances. The proposal should provide that all Selected Vendor records relating to log entries shall be

subject to inspection and copying by the Authority during the Selected Vendor's regular business hours, upon 72 hours' prior notice.

6) Legal Information.

a. **Certification of Affirmative Action Compliance.** Consistent with the Authority's policy to further the goals of Executive Order 390, a copy which is included in this RFP as Appendix C, all Vendors must provide a certification of affirmative action compliance as to all officers and others with an interest in said Vendor. The Statement of Non-Discrimination Policy included in this RFP as Schedule B must be completed and signed by an authorized officer or agent of the Vendor, and included with the submission of the proposal package.

b. **Chapter 40J Disclosure Statement.** The Chapter 7, Section 40J Disclosure Statement included in this RFP as Schedule E must be completed, signed by an authorized officer or agent of the Vendor, and included with the submission of the proposal package.

c. **Qualification by Foreign Entities to Conduct Business in the Commonwealth.** In the event that a Vendor is not a Massachusetts entity, it shall include as part of its proposal a statement agreeing to make all necessary filings to qualify to conduct business in the Commonwealth of Massachusetts prior to execution of the Vendor Lease Agreement. Although the Authority does not require foreign entities to qualify in Massachusetts prior to submitting a proposal, any such entity will promptly take all necessary measures to become qualified to conduct business in Massachusetts at its own expense, upon the written request of the Authority without regard to whether such entity is actually designated the Selected Vendor, and, in the event that such selection is made, prior to conducting any business in the Commonwealth.

d. Evidence of Authority

i. **Corporate Resolution.** In the event that a Vendor is a corporation, it shall include as part of its proposal a duly executed resolution of its Board of Directors, either approving the particular proposal being submitted, or specifically authorizing and empowering a designated agent of said corporation to bind the corporation in all matters involving, related to, or incidental to the submission of a proposal hereunder and, if accepted by the Authority, the corporation's full performance under the terms of the Vendor Lease Agreement. Included in this RFP as Schedule D is a sample Clerk's Certificate.

ii. **Other Entities.** In the event that a Vendor is an entity other than a corporation (e.g., general partnership, limited partnership, or a limited liability company), it shall include as part of its proposal appropriate evidence of authority specifically approving the particular proposal being submitted, or specifically authorizing and empowering a designated agent of said entity to bind the entity in all matters involving, related to, or incidental to the submission of a proposal hereunder and, if accepted by the Authority, the entity's full performance under the terms of the Vendor Lease Agreement.

e. **Additional Certifications.** In order to substantiate compliance with a) Chapter 66A of the Massachusetts General Laws regarding confidentiality and privacy; b) Section 49A of Chapter 62C of the Massachusetts General Laws regarding taxes; c) required Secretary of State filings; and (d) the no conflict of interest/collusion provisions of this RFP, the Additional Certifications included in this RFP as Schedule C must be completed and signed by an authorized officer or agent of the Vendor, and included with the submission of the proposal package.

D. Fee Deposit

The Authority will require each Vendor to provide a fee deposit of Fifty Thousand Dollars (\$50,000.00) in the form of a bank, cashier's, or certified check drawn on a Massachusetts bank without intervening endorsement made payable to the "Massachusetts Turnpike Authority", due at the time that each Vendor submits its proposal (the "Fee Deposit"). The Fee Deposit will be held by the Authority until the selection of the Selected Vendor. Upon selection, the Fee Deposit submitted by the Selected Vendor will be deemed fully earned by the Authority and non-refundable, except as otherwise provided herein. Fee Deposits from Vendors who are not selected by the Authority as the Selected Vendor will be returned, without interest, as soon as practicable following the execution and delivery of the Vendor Lease Agreement.

The Fee Deposit shall, to the extent necessary, be applied by the Authority against any and all out-of-pocket costs and expenses incurred by the Authority in connection with the preparation of this RFP and the execution of the Vendor Lease Agreement, and the form of the Vendor Maintenance Agreements (the "Third Party Costs"). If, at the time of the execution of the Vendor Lease Agreement, the Authority reasonably believes that the amount of the Fee Deposit from the Selected Vendor will be insufficient to pay for all Third Party Costs, then such Selected Vendor, if so requested by the Authority at such time, shall supplement its Fee Deposit by the amounts then requested by the Authority concurrently with its execution of the Vendor Lease Agreement. If the Selected Vendor fails, if so requested, to supplement its Fee Deposit at the time of its execution of the Vendor Lease Agreement, then such event would constitute a default and the Fee Deposit will be deemed forfeited by such Vendor. Any unexpended portion of the Selected Vendor's Fee Deposit will be returned to the Selected Vendor, without interest, as soon as practicable following the execution of the Vendor Lease Agreement.

E. Vendor Costs

Each Vendor shall bear sole responsibility for all costs and expenses incurred by it in connection with the preparation of its proposal and (if applicable) the consummation of the transaction contemplated by this RFP, including any costs related to any third party representation engaged by the Vendor.

V Vendor Selection

A. Selection Process

- 1) **Pre-proposal Meeting and Central Artery Tunnel and Facility Tour.** A pre-proposal meeting, including a guided tour of the CA/T Project facilities, will be held with all potential Vendors, with the Authority and CA/T Project staff and technical advisors available to answer questions. The Authority reserves the right not to answer any question or to answer it in writing.
- 2) **Questions and Answers.** Potential Vendors will be given the opportunity to submit written questions regarding any aspect of this RFP. The Authority will endeavor to answer all questions in writing, but reserves the right not to respond. Questions and answers will be distributed to all parties that requested this RFP in writing.
- 3) **Proposal Submission.** All proposals must be received by Mr. Stephen J. Hines, Chief Development Officer for the Authority, Ten Park Plaza, Suite 4160, Boston, Massachusetts 02116 by the proposal submission date shown below. Any proposals received after that time will be returned unopened.
- 4) **Preliminary Evaluation.** The Authority will first review all proposals to determine if they contain the required forms and if submittal requirements are met. Failure to submit specified forms and follow submittal requirements may result in the proposal being rejected.
- 5) **Internal Review.** All proposals will be evaluated to determine how well they meet the selection criteria through an internal review by Authority staff, consultants, and outside counsel. In addition to reviewing the proposals, the Authority and its consultants and advisors may review references and use the results in evaluating the proposals.
- 6) **Interviews.** At the Authority's discretion, oral presentations and interviews may be scheduled with all Vendors, finalists only, designated Vendors only, or not at all. From the date this RFP is issued until the execution of the Vendor Lease Agreement, the Authority will not meet with any Vendor, prospective Vendor, affiliate, or team member except at an interview scheduled by the Authority.
- 7) **Additional Information.** As part of its review of proposals, Authority staff may seek additional information or request revisions to submitted proposals prior to designating the Selected Vendor.
- 8) **Selection.** Following its review of all proposals, the Authority will designate the Selected Vendor based on the Selection Criteria discussed below.
- 9) **Finalize Vendor Lease Agreement.** The Authority will finalize the Vendor Lease Agreement and then submit it to the Authority's Board for approval following the Selected Vendor's execution of the Vendor Lease Agreement.
- 10) **Authority's Board Approval.** The Authority's Board will vote to approve the Selected Vendor and authorize the Authority's execution of the final form of the Vendor Lease Agreement.
- 11) **Execution of Vendor Lease Agreement.** Following said approval by the Authority's Board, the Vendor Lease Agreement will be executed by the Authority.

- 12) **Execution of Vendor Maintenance Agreements.** The Vendor Maintenance Agreements shall be executed by the Selected Vendor and the Carriers simultaneously with the execution of the Carrier Lease Agreements by the Authority and the Carriers.

B. Schedule

The schedule for the submission of proposals and selection process is shown below. The Authority reserves the right to change or amend this schedule at any time at its sole discretion. Dates after the release of the RFP that contemplate action by the Authority are approximate and are subject to change in the Authority's discretion. Prior to the proposal submission date, all parties who have requested a copy of this RFP in writing will be notified in writing of any changes. Subsequent to the proposal submission date, only Vendors who have submitted responses prior to the deadline will be notified, in writing, of changes.

Release of this RFP	July 10, 2002
Central Artery Tunnels Tour	July 31, 2002
Written questions regarding RFP due	August 7, 2002
Responses to questions due	August 15, 2002
Proposal submission date	August 22, 2002
Preliminary Designation	September 12, 2002
Finalize Vendor Lease Agreement	October 3, 2002
Authority's Board Approval of Vendor Lease Agreement	October 4, 2002
Authority's Execution of Vendor Lease Agreement	October 4, 2002
Selected Vendor and Carriers Execute Vendor Maintenance Agreements; Authority Finalizes and Executes Carrier Lease Agreements with Carriers following Authority Board Approval of Carrier Lease Agreements	November 4, 2002
Commencement of Construction	November 18, 2002

C. Selection Criteria

In designating the Selected Vendor, the Authority will carefully consider the following criteria:

- 1) **Proposed System.** The Vendor's proposed System, including its design, technology, equipment, flexibility, expansion capacity, construction schedule and its conformance with the design criteria provided herein will be a basic criterion for selecting the Selected Vendor.

- 2) **System Installation Costs.** All submissions will be evaluated according to the maximum dollar amount of the System installation costs contained in the submission. This will include the cost of System installation and the Vendor's fee for design and installation of the System.
- 3) **System Maintenance Costs.** All submissions will be evaluated according to the projected System maintenance costs contained in the submission. This will include the cost of regular System maintenance, the cost of anticipated System upgrades, and the Selected Vendor's fee for maintenance of the System.
- 4) **Vendor Team.** The quality of all members of the Vendor team and its capacity to carry out the project will be considered, including previous Vendor team experience, technical expertise, and management capacity in connection with both construction and maintenance of carrier-neutral wireless telephone systems.
- 5) **Financial Capability.** Each Vendor's financial capacity to carry out its proposal will be considered, including each Vendor's financial position and strength.
- 6) **Conformance with RFP Requirements.** All submissions must be accompanied by a complete set of the schedules included in this RFP and each Vendor must respond to all of the requirements set forth in this RFP and submit all contemplated documents and information, including, without limitation, tender of the Fee Deposit. Any Vendor who does not submit all of the requested schedules, the Fee Deposit or the required information or does not comply with this RFP's requirements or whose responses to the submission requirements set forth in this RFP are not satisfactory to the Authority may be eliminated from consideration.

The Authority will designate the Selected Vendor based upon information contained in the submissions and the Authority's analysis of same. The Authority also reserves the right to request additional information from any or all Vendors and to use that information in designating the Selected Vendor.

VI RESERVATIONS AND CONDITIONS

A. General Reservations

- 1) The Authority makes no representations or warranties as to the accuracy, correctness, currency, and/or completeness of any and all of the information provided in or pursuant to this RFP. The furnishing of information by the Authority shall not create or be deemed to create any obligation or liability upon it for any reason whatsoever and each Vendor, by submitting a proposal to the Authority in response to this RFP, expressly agrees that it shall not hold the Authority, any agent or contractor thereof, or the Commonwealth of Massachusetts liable or responsible therefor in any manner whatsoever.
- 2) The Authority reserves the right to extend, suspend, supplement, withdraw, or amend this RFP for any reason or for no reason at any time. The Authority reserves the right to change the selection process or schedule to address changes in conditions or in the pool of Vendors.
- 3) The Authority reserves the right to discontinue its selection of any Vendor, reject any proposal, or terminate the entire RFP process for any reason whatsoever or for no reason, prior to the execution of the Vendor Lease Agreement.
- 4) The Authority reserves the right to reject any proposal that does not include all requested schedules, or that is not submitted in conformance with this RFP, or that contains responses to the submission requirements set forth in Section IV of this RFP which are not satisfactory to the Authority, or to reject any and all proposals, in its sole discretion, for any reason or for no reason. The Authority further reserves the right to waive or decline to waive irregularities in any proposal when it determines that it is in the Authority's best interest to do so.
- 5) The Authority reserves the right to negotiate any and all aspects of the Vendor Lease Agreement and the Vendor Maintenance Agreement and specifically reserves the right to request additional information or revised proposals from Vendors.
- 6) If any matter or circumstance under this RFP requires the consent or approval of the Authority or that such matter be satisfactory to the Authority, then same may be granted, withheld, denied or conditioned by the Authority in the exercise of its sole discretion.

B. Severability

If for any reason, any section or provision of this RFP or any addendum to it is determined to be illegal, invalid, or unenforceable under present or future laws or regulations, then the remainder of this RFP shall not be affected thereby.

C. Conflict of Interest, Collusion

- 1) By submitting a proposal, a Vendor certifies that no relationship exists between the Vendor and the Authority or any officer, employee, or agent of the Authority that constitutes unfair competition or a conflict of interest or that may be adverse to the Authority.

- 2) By submitting a proposal, a Vendor certifies that it has not acted in collusion with any other Vendor, Vendor, or Carrier, or other entity doing business with the Authority in a way that would constitute unfair competition or that may be adverse to the Authority.



MASSACHUSETTS TURNPIKE AUTHORITY

State Transportation Building, 10 Park Plaza, Suite 4160, Boston, Massachusetts 02116
(617) 248-2800

Jordan Levy
Vice Chairman

Richard K. Anderson
Board Member

Christy F. Mihos
Board Member

John M. Moscardelli
Board Member

Exh. JC-PBV-3

MATTHEW J. AMORELLO
Chairman

January 30, 2003

Dear Interested Party:

The Massachusetts Turnpike Authority (the "Authority") is seeking submissions from eligible wireless telephone service providers ("Carriers") that wish to provide wireless telephone service in a carrier-neutral shared antenna wireless telephone communications system (the "System") to be constructed within the new Central Artery Tunnels.

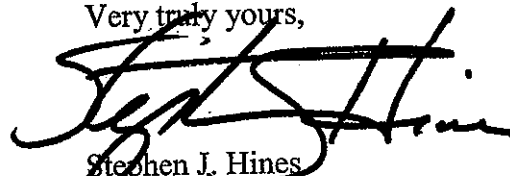
Pursuant to a separate RFP process, the Authority preliminarily designated Maverick Construction Corporation, partnering with Mikom, an Allen Telecom Company, to construct, operate and maintain the System. The Authority is in the process of negotiating a lease agreement with this vendor, and this designation will not be final and binding upon the Authority until such time as the vendor and the Authority have executed the lease agreement following the approval of the Authority's Board.

The enclosed Request for Proposal - Carrier ("RFP") outlines the CA/T Project facilities, the Carrier submission requirements, the System to be installed by the designated Vendor and the agreements to be executed by the Carrier in order to operate within the System. More specifically, each Carrier will be required to enter into a direct lease agreement with the Authority to rent space in the System and an agreement with the vendor under which the vendor will provide system maintenance and repair for a fee payable to the vendor. Pursuant to these carrier lease agreements, the initial costs of system construction and installation will be funded by Carrier pre-payments to an account to be controlled by the Authority.

Carrier responses to this RFP are not intended to be competitive bids or proposals. It is the Authority's intent to accommodate all qualified Carriers on the System; however, any Carrier that fails to timely make a submission pursuant to this RFP may lose the opportunity to provide wireless telephone service in the Central Artery Tunnels.

Sealed Carrier submissions must be submitted by 12:00 p.m. on March 6, 2003 at the Authority's offices at Ten Park Plaza, Suite 4160, Boston, Massachusetts. Thank you for your interest in this RFP and we look forward to your participation in this project.

Very truly yours,



Stephen J. Hines
Chief Development Officer



Massachusetts Turnpike Authority
Matthew Amorello, Chairman

Request for Proposals - Carrier



Central Artery Tunnel Wireless Project

January 30, 2003

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I Introduction

A. The CA/T Wireless Project

The Massachusetts Turnpike Authority (the "Authority") is an independent state authority created under M.G.L. Chapter 81A et. seq. (the "Enabling Act"). The Authority is seeking to provide wireless telephone service within selected tunnel sections (the "Central Artery Tunnels") of the Central Artery/Tunnel Project ("CA/T Project") by means of a carrier-neutral shared antenna wireless telephone communications system (the "System"). The Authority plans to make the System available for use by all eligible wireless telephone service providers ("Carriers").

The System will be installed within the three phases of the CA/T Project: the Seaport Access Roadway as Phase 1, the Northbound Artery as Phase 2, and the Southbound Artery as Phase 3. Depending on the construction and completion schedule of the CA/T Project, preliminary design and installation of the System may be executed sequentially in order of phase number, or contemporaneously in two or more of any of the phases at once. In the future, the Authority may opt to expand the System to the Harbor, Prudential, and Central Artery North Area ("CANA") Tunnels.

Through a separate process which began on July 10, 2002 (the "Vendor RFP"), the Authority sought competitive lease proposals from entities capable of installing, operating, maintaining, and upgrading the System ("Vendors") and has preliminarily designated one Vendor, Maverick Construction Corporation, partnering with Mikom, an Allen Telecom Company, to install the System (the "Selected Vendor"). Appendix C generally describes the System that the Selected Vendor will install in the Central Artery Tunnels. The Authority and the Selected Vendor now are negotiating a lease agreement that will grant the Selected Vendor the exclusive right and obligation to install, maintain, and operate the System in accordance with such proposal (the "Vendor Lease Agreement"). The Authority will finalize and execute the Vendor Lease Agreement with the Selected Vendor prior to or concurrently with the execution of the Carrier Lease Agreements described below. This designation of the Selected Vendor is preliminary; such designation is not final and binding upon the Authority until such time as the Selected Vendor and the Authority have executed the Vendor Lease Agreement following the approval of the Authority's Board. In the event that the Authority and the presently designated Selected Vendor fail to execute a Vendor Lease Agreement, another Vendor may be designated as Selected Vendor. Should the Authority fail to execute a satisfactory Vendor Lease Agreement with any subsequently designated Selected Vendor, the Authority shall have the right to terminate both the Vendor and the Carrier RFP processes.

This Request for Proposal – Carrier ("RFP") seeks submissions from Carriers that wish to use the System to provide wireless telephone service. This RFP establishes the submission requirements for Carriers and provides an overview of the agreements that the Carriers will be required to enter into in order to provide such service. It also contains a description of the CA/T Project facilities (see Appendix A), the existing and planned CA/T Project radio frequencies (see Appendix B) and the Selected Vendor's technical proposal for the System (see Appendix C).

Pursuant to this RFP process, each interested Carrier will be required to enter into a direct lease agreement with the Authority (the "Carrier Lease Agreements") to rent space in the System and an agreement with the Selected Vendor under which the Selected Vendor will provide System maintenance and repair for a fee payable to the Selected Vendor (the "Vendor Maintenance Agreements"). Pursuant to the Carrier Lease Agreements, the initial costs of System construction and installation will be funded by Carrier pre-payments to an escrow account to be controlled by the Authority (the "System Escrow Account") in accordance with a cost allocation method set forth in the Carrier Lease Agreements. The Authority has not yet determined the method by which the construction costs will be allocated among the respective Carriers. Methods currently under consideration include allocating such costs pro-rata among the Carriers or based upon the number of channels (or frequencies) used or reserved for use by each Carrier in the Central Artery Tunnels. Regardless of the actual cost allocation method ultimately adopted by the

Authority, the Authority believes that the actual amount to be paid by each Carrier on account of such costs will be significantly less than the amount of design and construction costs that each Carrier would have incurred if it had installed its own system in the Central Artery Tunnels. Each Carrier shall make its initial payment into the System Escrow Account upon its execution of the Carrier Lease Agreement. Once the System is operational, the Carriers will be charged a maintenance fee for their share of System use based upon a method to be determined by the Authority and set forth in the Vendor Maintenance Agreements. As with construction costs, the methods currently under consideration include allocating such costs pro-rata among the Carriers or based upon the number of channels (or frequencies) used or reserved for use by each Carrier in the Central Artery Tunnels. The Vendor Maintenance Agreements will establish the means by which the Carriers will reimburse the Selected Vendor for costs and expenses associated with System operation.

Carrier responses to this RFP are not intended to be competitive bids or proposals. It is the Authority's intent to accommodate all qualified Carriers on the System; however, any Carrier that fails to make a submission pursuant to this RFP may lose the opportunity to provide service in the Central Artery Tunnels and will not have the opportunity to participate in negotiating the provisions of the Carrier Lease Agreements or the Vendor Maintenance Agreements. In the event that the Authority fails to sign Carrier Lease Agreements with Carriers willing to fund into escrow the aggregate System construction costs, or if the Authority signs such Agreements with such Carriers but any or all of the Carriers fail to fund their full share of such amount, then in either case, the Authority may elect to terminate any and all Carrier Lease Agreements and this RFP process in its entirety.

Carrier submissions must be submitted by 12:00 p.m. local time on March 6, 2003 at the Authority's offices at Ten Park Plaza, Suite 4160, Boston, Massachusetts. Section IV of this RFP includes a detailed schedule of the submission and negotiation process.

B. Defined Terms

Throughout this RFP, the attached Appendices and Schedules, and subsequent documents related to this RFP process, the following terms shall have the meanings provided in the text, as referenced below.

- A. "Authority" as defined in Section I-A.
- B. "CA/T Project" as defined in Section I-A.
- C. "Carrier" as defined in Section I-A.
- D. "Carrier Lease Agreements" as defined in Section I-A.
- E. "Carrier Maintenance Fee" as defined in Section II-B.
- F. "Central Artery Tunnels" as defined in Section I-A.
- G. "Enabling Act" as defined in Section I-A.
- H. "Fee Deposit" as defined in Section III-D.
- I. "RFP" as defined in Section I-A.
- J. "Selected Vendor" as defined in Section I-A.
- K. "System" as defined in Section I-A.
- L. "System Escrow Account" as defined in Section I-A.

- M. "Third Party Costs" as defined in Section III-D.
- N. "Vendor" as defined in Section I-A.
- O. "Vendor Lease Agreement" as defined in Section I-A.
- P. "Vendor Construction Amount" as defined in Section II-A.
- Q. "Vendor Maintenance Agreements" as defined in Section I-A.
- R. "Vendor RFP" as defined in Section I-A.

C. Available CA/T Project Information

To facilitate Carriers' preparation of their submissions and understanding of the Central Artery Tunnels, the Authority has compiled plans of Vent Building 6 and schematic plans of each phase of the CA/T Project (Seaport Access Road, Central Artery Northbound and Central Artery Southbound). The schematic plans provide detailed information about each of the roadways and tunnels, including, but not limited to, interior conditions, utility locations, clearance heights and other dimensions. Requests for copies of these plans should be sent to Mr. Stephen J. Hines, Chief Development Officer, Massachusetts Turnpike Authority, Ten Park Plaza, Suite 4160, Boston, MA 02116, along with a separate check payable to the Massachusetts Turnpike Authority in the amount of \$500.00.

The Authority makes no representation or warranty as to the accuracy, completeness, currency, and/or correctness of any of the information contained in or furnished pursuant to this RFP. All interested Carriers should carefully review this RFP, particularly the Reservations and Conditions set forth in Section V below.

II CARRIER AGREEMENTS

Pursuant to section 4(m) of the Enabling Act, the Authority has the power to grant permission to any public utility, corporation, or person to place and maintain on, under, or within the Turnpike or Metropolitan Highway System conduits, cables, wires, towers, or other structures which do not interfere with the operation and maintenance of the Turnpike or Metropolitan Highway System and to contract for such permission on such terms and conditions as may be fixed by the Authority. The Authority will enter into Carrier Lease Agreements, establishing Carriers' right to provide wireless telephone services in the CA/T Project within the System to be installed by the Selected Vendor. The Selected Vendor and each Carrier will enter into a Vendor Maintenance Agreement acceptable to the Authority under which the Selected Vendor will provide System maintenance and repair for a fee payable to the Selected Vendor. The Authority reserves its right to negotiate and/or change all terms of the Carrier Lease Agreements and/or the Vendor Maintenance Agreements prior to execution.

A. Carrier Lease Agreements

The Carrier Lease Agreements will include, but not be limited to, the terms and conditions listed below, and otherwise shall be satisfactory to the Authority. The Authority envisions using the same form of Carrier Lease Agreement for all Carriers but it is not obligated to do so. The terms of the Carrier Lease Agreements will apply fairly to all Carriers, regardless of market share. All terms described herein are subject to further negotiation.

- 1) **System Installation Costs.** Carriers shall prepay all costs of System installation and initial construction (the "Vendor Construction Amount") into the System Escrow Account and shall replenish the account as necessary. The actual cost allocation method shall be determined by the Authority and set forth in the Carrier Lease Agreements. Each Carrier shall be liable for its share of the Vendor Construction Amount. The Vendor Construction Amount shall include all equipment, installation, Vendor costs, and Authority review and oversight costs. Be advised that the Selected Vendor has provided the Authority with a guaranteed maximum System price construction proposal of not more than \$10,080,732 (excluding Authority review and oversight costs) to construct the System in the Central Artery Tunnels.
- 2) **System Maintenance Costs.** Carriers shall pay all costs of System maintenance and management directly to the Selected Vendor, in addition to a stated fee for operation and maintenance of the System (the "Carrier Maintenance Fee"). System maintenance costs shall be allocated among the Carriers in a manner to be determined by the Authority. Be advised that the Selected Vendor has provided the Authority with a proposal to charge a 10% annual fee to the Carriers for maintaining and repairing the System in addition to being reimbursed for its annual System maintenance and repair costs.
- 3) **Fully Earned Payment.** Upon the execution and delivery of the Carrier Lease Agreements by the Carriers, the Carriers shall pay to the Authority the aggregate sum of \$500,000 (the "Fully Earned Payment"). The Fully Earned Payment shall be allocated to the Carriers in the same manner that the Vendor Construction Amount is allocated to the Carriers. The Fully Earned Payment shall be a one-time only payment that shall be deemed fully earned by the Authority and non-refundable (except as otherwise provided herein).
- 4) **Rent.** Each Carrier shall pay base rent to the Authority, which shall be phased to match the completion of CA/T Project components and build out of the System, and shall be increased annually based on the CPI but in no event less than 2.5% or greater than 5% per year. Each Carrier shall pay an initial base rent of \$7.92 per linear foot of space in the System. As part of base rent, each Carrier will receive two (2) channels (or frequencies) for its own use in the System. In addition, each Carrier shall pay use-based rent to the Authority, to be measured by the number of channels (or frequencies) used or reserved for use by such Carrier within the Central Artery Tunnels. Base rent (not including the annual adjustment set forth above) shall be approximately

\$223,027.20 per Carrier per annum for Phase I (approximately 28,160 linear feet), approximately \$157,330.80 per Carrier per annum for Phase II (approximately 19,865 linear feet) and approximately \$103,989.60 per Carrier per annum for Phase III (approximately 13,130 linear feet).

- 5) **Term.** The initial term of the Carrier Lease Agreements shall be ten (10) years. At the Authority's option, the Carrier Lease Agreements may be renewed for two (2) additional five (5) year terms.
- 6) **Performance Guarantees.** All Carriers shall be required to provide acceptable security or guarantees to the Authority to ensure timely payment and performance of all obligations under the Carrier Lease Agreements.
- 7) **Authority Contingency.** In the event that the Authority fails to sign Carrier Lease Agreements with Carriers willing to fund into escrow the aggregate System construction costs, or if the Authority signs such Agreements with such Carriers but any or all of the Carriers fail to fund their share of the Fully Earned Payment or such costs, then, in either case, the Authority may elect to terminate the Carrier Lease Agreements. In such circumstances, the escrow funds from the System Escrow Account and the paid Fully Earned Payment shall be returned to the Carriers but the Fee Deposit described in Section III-D below shall not be refundable. The Authority shall not authorize the Selected Vendor to commence construction of the initial System until the Authority has delivered a written notice to the Carriers waiving the foregoing termination right.
- 8) **Upgrades.** The Carrier Lease Agreement shall provide a procedure for capital upgrades to the System. The Authority shall make the determination that a capital upgrade is needed, in consultation with the Selected Vendor. The Selected Vendor shall negotiate the price of any capital upgrades, subject to Authority approval. Carriers shall prepay all costs of System upgrades into the System Escrow Account and will replenish the account as necessary. Each Carrier will be liable for its share pursuant to a cost allocation method determined by the Authority and set forth in the Carrier Lease Agreements. Upgrade costs will include all equipment, installation, Vendor costs, and an agreed Vendor fee.
- 9) **Restrictions.** Carriers shall not be permitted to install or operate a complete communications system or to sublease, license, or permit others to use portions of the System.
- 10) **New Carriers.** The Authority reserves the right to accommodate additional Carriers on the System. Additional Carriers will enter into the same form of Carrier Lease Agreement as the original Carriers. Carrier Lease Agreements with any additional Carriers shall expire on the same date as the original Carrier Lease Agreements. Each additional Carrier shall pay its share of current maintenance costs, as well as a share of initial System installation costs, as described above. Such payments of initial System installation costs shall be distributed to all Carriers currently on the System at the time an additional Carrier executes its Carrier Lease Agreement pursuant to a cost allocation method determined by the Authority and set forth in the Carrier Lease Agreements. Each additional Carrier also shall make a Fully Earned Payment to the Authority in an amount to be determined by the Authority (which shall be kept by the Authority and not distributed to the Carriers) upon such Carrier's execution of the Carrier Lease Agreement.
- 11) **Proprietary Equipment Premises.** The Carrier Lease Agreement shall provide for a lease of a 10'x10' space in the Central Office location for each Carrier to enable the Carrier to house the proprietary equipment necessary for it to provide wireless telephone service on the System. The cost of such 10'x10' space shall be included in the base rent charged each Carrier. Any Carrier that wishes to occupy more than its allotted proprietary equipment space may lease additional space at a rate to be determined by the Authority.
- 12) **Taxes.** The Carriers shall pay and discharge all taxes, assessments, levies, excises or other charges imposed by any lawful authority (other than the Authority) arising from the System or the grant of rights and obligations to the Carriers (other than any tax on the income of the Authority).
- 13) **Insurance.** Each Carrier shall maintain insurance policies in full force, at its expense, and in amounts, deductibles, and type to be specified by the Authority in the Carrier Lease Agreement, which shall include without limitation, Commercial General Liability, Workers' Compensation, Umbrella Liability, Business Interruption, and Property Insurance. Any contractors used by the Carriers also shall furnish Certificates of

Insurance throughout the term of the Carrier Lease Agreement, and the Authority shall be named as an additional insured.

- 14) **Indemnification and Hazardous Materials.** The Carriers shall indemnify, defend, and hold harmless the Authority against all claims or liabilities that arise during the term of the Carrier Lease Agreement, including without limitation, any claims related to hazardous materials. It shall be the responsibility of the Carriers to respond to any releases of hazardous materials for which they are responsible during the term of the Carrier Lease Agreement.
- 15) **Access and Inspection.** The Authority shall retain the right to enter upon any part of the System at any time, with or without notice, for any purposes whatsoever, including, but not limited to, inspection of the System or maintenance of highway facilities.
- 16) **Cooperation and Non-Interference with CA/T Project.** The Carriers shall work closely with CA/T Project personnel and CA/T Project contractors to insure that their provision of wireless telephone services does not interfere with CA/T Project construction and completion activities, or with CA/T Project radio frequencies. In the event of a conflict, CA/T Project work and operations will take precedence over the Carriers' use of the System.
- 17) **Compliance with Regulations.** In their use of the System, the Carriers shall comply with all applicable federal, state, and local laws, rules and regulations.
- 18) **Civil Rights Requirements.** The Carriers shall comply with the Authority's policies and procedures supporting affirmative action, diversity in the workplace, and affirmative market contracting in their use of the System.
- 19) **Limitation of Liability.** The Authority shall have no liability or responsibility whatsoever for any losses or damages sustained by the Carriers relating to the System, including, without limitation, in the event of a System shutdown (whether for public safety reasons, maintenance or repair, or otherwise), System malfunction, or due to any acts or omissions of the Selected Vendor or any party contracting with the Selected Vendor respecting the System.

B. Vendor Maintenance Agreements

The Selected Vendor and each individual Carrier will be required to enter into the Vendor Maintenance Agreement in a form to be furnished by the Authority that will provide that the Selected Vendor will maintain and repair the System for a fee payable by the Carriers. The Vendor Maintenance Agreements will include, but not be limited to, the following terms and conditions.

- 1) **Vendor responsibilities.** The Vendor Maintenance Agreements will detail the Selected Vendor's maintenance and repair responsibilities respecting the System. Except as provided in the Vendor Lease Agreement, the Selected Vendor shall not be permitted to terminate service to any Carrier without the Authority's approval and specific cause.
- 2) **Vendor costs and fees.** Each Carrier shall be required to pay the Carrier Maintenance Fee to the Selected Vendor. In general, Carrier Maintenance Fees shall be based on a formula to be determined by the Authority and set forth in the Vendor Maintenance Agreements that will provide the Selected Vendor with a reasonable payment for its costs and level of activity. Carrier Maintenance Fees shall be subject to approval by the Authority. Be advised that the Selected Vendor has provided the Authority with a proposal to charge a 10% annual fee to the Carriers for maintaining and repairing the System in addition to being reimbursed for its annual System maintenance and repair costs.
- 3) **Term.** The Vendor Maintenance Agreements shall be coterminous with the Vendor Lease Agreement.

- 4) **Liability of the Authority.** The Authority shall have no liability or responsibility whatsoever for any losses or damages sustained by the Carriers relating to the System, including, without limitation, in the event of a System shutdown (whether for public safety reasons, maintenance or repair, or otherwise), System malfunction, or due to any acts or omissions of the Selected Vendor or any party contracting with the Selected Vendor respecting the System.

III CARRIER SUBMISSION REQUIREMENTS

A. General

Proposal should be addressed to:

**Mr. Stephen J. Hines
Chief Development Officer
Massachusetts Turnpike Authority
Ten Park Plaza, Suite 4160
Boston, MA 02116**

CA/T Wireless Submissions - CARRIER

Each submission must be accompanied by the Fee Deposit and financial assurance information described in Section III of this RFP. All submissions must be complete and contain all required forms and information. No changes, additions or supplements will be accepted after the initial submission, unless specifically requested or allowed by the Authority. Proposals must be received by the Authority's Chief Development Officer at Ten Park Plaza, Suite 4160, Boston, Massachusetts by **12 noon, local time, on March 6, 2003**. All submissions must be sealed to provide confidentiality of the information and to ensure that the submissions remain intact. Once submitted to the Authority, all submissions and accompanying materials become irrevocable and the sole property of the Authority. All submissions are subject to the reservations and conditions specified in Section V of this RFP.

B. Submission Format

Each Carrier submission must address all of the submission requirements called for in this RFP, and must be in the format specified. Carriers must complete all of the schedules included in this RFP including, without limitation, the Carrier Rent Proposal Form included as Schedule A, and provide all requested information.

1) **Components.** All submissions must be submitted in separate components, described in detail in the following sections of this RFP. Each component should be separately bound and should clearly identify the Carrier by name and the component name. The contents of each component shall be:

- a. Component I: Statement of Interest and Negotiation Contacts
- b. Component II: Non-Financial Information
- c. Component III: Financial Information
- d. Component IV: Legal Information
- e. Component V: Fee Deposit

2) **Page limits.** Submissions must not exceed the following maximum page limits for each component. In counting pages, each printed side of a sheet of paper shall be counted as a single page.

a. **Component I: Statement of Interest and Negotiation Contacts:** This component must be no more than two (2) pages in length.

b. **Component II: Non-Financial Information:** This component must be no more than ten (10) pages in length.

c. **Component III: Financial Information:** This component must be no more than five (5) pages in length, exclusive of the Financial Proposal Form that must be bound with this component.

3) **Copies.** For components I-IV, fifteen (15) complete, bound copies of each component must be submitted. In addition, one unbound, black-and-white copy, suitable for photocopying, of components I-IV must be submitted.

4) **Forms.** Required forms are provided in the Schedules included in this RFP. All forms must be bound with the proposal.

C. Submission Content

Each Carrier submission must address all of the submission requirements called for in this RFP, and must be in the format specified. Carriers must complete all of the schedules included in this RFP and provide all requested information. Carriers are encouraged to address the submission requirements concisely and in a straightforward manner.

1) **Statement of Interest and Negotiation Contacts.** Carriers must state their interest in providing wireless service in the Central Artery Tunnels on the terms outlined in this RFP, and must provide both business and legal contacts for negotiations with the Authority.

2) **Non-Financial Information.**

a. **Carrier Description.** Carriers should include in their submissions the following information:

i. A description of the Carrier entity, including the type of entity, its officers and, if not publicly traded, its shareholders holding a 5% or greater interest in the entity;

ii. A summary of the Carrier's history as a wireless services provider, including its experiences providing wireless services in other markets;

iii. A summary of the Carrier's regional business plan;

iv. A description of the wireless services currently offered by the Carrier;

v. A statement of the Carrier's greater Boston market share and basis;

vi. A statement of the number of channels (or frequencies) in the U.S. currently occupied by the Carrier and/or its affiliates; and

vii. A list of all Federal Communications Commission (FCC) licenses held by the Carrier and/or its affiliates.

3) **Financial Information.**

a. **Rent Proposal.** Carriers should complete the Rent Proposal Form included in this RFP as Schedule A with the initial base rent and corresponding CPI adjustment figures as set forth therein. Each Carrier must indicate on the form the following:

System use: The projected number of channels (or frequencies) the Carrier intends to occupy on the System, and the projected growth in System use over the term of the Carrier Lease Agreement.

Use-Based Rent: The Carrier's proposal for use-based rent rates based on the number of channels (or frequencies) projected for use, and estimated annual CPI increase provisions.

Cash flow: A projection of cash flow over the term of the Carrier Lease Agreement showing annual amortization of System costs (including initial costs and upgrades); base rent, as escalated each year based on assumed CPI; projected use-based rent, based on projected System use; and total annual rent to the Authority.

In completing the Rent Proposal Form, all Carriers should assume that each Carrier will be responsible for not less than 1/6th of the costs to construct and maintain the System. By suggesting that the Carriers make the foregoing assumption, the Authority in no way is bound to agree to such a cost allocation method in the Carrier Lease or Vendor Maintenance Agreements.

b. **Financial Questions.** The submission must answer the following questions. Note that "Bankruptcy" as used below includes any bankruptcy, reorganization, arrangement, composition, readjustment, liquidation, dissolution or other relief for debtors under any present or future federal, state or other statute, law or regulation (including, without limitation, the present federal bankruptcy act). If the answer to any of these questions is "yes", please describe the circumstances in detail.

- i. Has the Carrier ever voluntarily filed for Bankruptcy protection, been the subject of an involuntary Bankruptcy proceeding, made an assignment (or taken similar action) for the benefit of its creditors, admitted or failed to contest the material allegations of any petition in Bankruptcy, sought or acquiesced in the appointment of any trustee, receiver, conservator or liquidator of the Carrier or any of any of its assets or properties, or been declared bankrupt or insolvent by any court?
- ii. Has the Carrier ever been prohibited, restrained or limited from doing business with a governmental or public agency?
- iii. Has the Carrier ever been indicted for or convicted of a felony?
- iv. Has the Carrier ever defaulted on a loan?
- v. Has the Carrier ever been in default of a ground or other lease or had a ground or other lease terminated for the Carrier's failure to comply with the terms of the lease?

c. **Carrier Financial Information.**

The submission package must include documentation to evidence the Carrier's financial capabilities.

- If the Carrier or any entity owning five percent (5%) or more of an equity interest in the Carrier is a publicly-held entity, this evidence should include consolidated financial statements as submitted to the Securities and Exchange Commission on Form 10K for the last two fiscal years.
- If the Carrier or any entity owning five percent (5%) or more of an equity interest in the Carrier is a privately held or not-for-profit organization, this evidence should include, as applicable: balance sheets for the last two fiscal years (all financial statements provided in the proposal should be certified); a statement of income for the last two fiscal years; and a

management discussion and analysis of the organization's financial condition for the last two fiscal years indicating any changes in the organization's financial position since the financial statements were prepared.

4) **Legal Information.**

a. **Certification of Affirmative Action Compliance.** Consistent with the Authority's policy to further the goals of Executive Order 390, a copy which is included in this RFP as Appendix D, all Carriers must provide a certification of affirmative action compliance as to all officers and others with an interest in said Carrier. The Statement of Non-Discrimination Policy included in this RFP as Schedule B must be completed and signed by an authorized officer or agent of the Carrier, and included with its submission.

b. **Chapter 40J Disclosure Statement.** The Chapter 7, Section 40J Disclosure Statement included in this RFP as Schedule E must be completed, signed by an authorized officer or agent of the Carrier, and included with the submission of the proposal package.

c. **Qualification by Foreign Entities to Conduct Business in the Commonwealth.** In the event that a Carrier is not a Massachusetts entity, said Carrier must include as part of its submission a statement agreeing to make all necessary filings to qualify to conduct business in the Commonwealth of Massachusetts prior to execution of the Carrier Lease Agreement and the Vendor Maintenance Agreement. Although the Authority does not require foreign entities to qualify in Massachusetts prior to submitting a proposal, it is specifically understood and agreed that any such entity will promptly take all necessary measures to become qualified to conduct business in Massachusetts at its own expense, upon the written request of the Authority without regard to whether such entity actually enters into a Carrier Lease Agreement and the Vendor Maintenance Agreement, and, in the event that such Agreements are executed, prior to conducting any business in the Commonwealth.

d. **Evidence of Authority.**

i. **Corporate Resolution.** In the event that a Carrier is a corporation, said Carrier must include as part of its proposal a duly executed resolution of its Board of Directors, either approving the particular proposal being submitted, or specifically authorizing and empowering a designated agent of said corporation to bind the corporation in all matters involving, related to, or incidental to the submission of a proposal hereunder and, if accepted by the Authority, the corporation's full performance under the terms of the Carrier Lease Agreement. Included in this RFP as Schedule D is a sample Clerk's Certificate.

ii. **Other Entities.** In the event that a Carrier is an entity other than a corporation (e.g., general partnership, limited partnership, or a limited liability company), said Carrier shall include as part of its proposal appropriate evidence of authority specifically approving the particular proposal being submitted, or specifically authorizing and empowering a designated agent of said entity to bind the entity in all matters involving, related to, or incidental to the submission of a proposal hereunder and, if accepted by the Authority, the entity's full performance under the terms of the Carrier Lease Agreement.

e. **Additional Certifications.** In order to substantiate compliance with a) Chapter 66A of the Massachusetts General Laws regarding confidentiality and privacy; b) Section 49A of Chapter 62C of the Massachusetts General Laws regarding taxes; c) required Secretary of State filings; and (d) the no conflict of interest/collusion provisions of this RFP, the Additional Certifications included in this RFP as Schedule B must be completed and signed by an authorized officer or agent of the Carrier, and included with the submission of the proposal package.

D. Fee Deposit

The Authority will require each Carrier to provide a fee deposit of One Hundred Thousand Dollars (\$100,000.00) in the form of a bank, cashier's, or certified check drawn on a Massachusetts bank without intervening endorsement made payable to the "Massachusetts Turnpike Authority", due at the time that each Carrier submits its submission (the "Fee Deposit"). Each Fee Deposit submitted by each Carrier will be deemed fully earned by the Authority and non-refundable upon its submission to the Authority, except as otherwise provided herein. Carriers who do not timely enter into a Carrier Lease Agreement and a Vendor Maintenance Agreement on terms acceptable to the Authority for any reason whatsoever shall be deemed to have forfeited their Fee Deposits.

The Fee Deposit shall, to the extent necessary, be applied by the Authority against any and all out-of-pocket costs and expenses incurred by the Authority in connection with the preparation of this RFP and the execution of the Carrier Lease Agreements and Vendor Maintenance Agreements (the "Third Party Costs"). Each individual Carrier will be responsible for the Authority's legal or other fees directly attributable to negotiations with that Carrier. If, at the time of the execution of the Carrier Lease Agreements and the Vendor Maintenance Agreements, the Authority reasonably believes that the amount of the Fee Deposit from any Carrier is insufficient to pay for that Carrier's share of the Third Party Costs, then such Carrier, if so requested by the Authority at such time, shall supplement its Fee Deposit in the amounts then requested by the Authority concurrently with its execution of the Carrier Lease Agreements. Any unexpended portion of the Fee Deposits from Carriers executing Carrier Lease Agreements and Vendor Maintenance Agreements shall be returned to such Carriers, without interest, within a reasonable time following the execution of such documents.

The Authority reserves the right to negotiate any and all aspects of the Carrier Lease Agreements and Vendor Maintenance Agreements, and specifically reserves the right to request revised proposals based on the negotiation of the Vendor Lease Agreement and/or based on negotiations with other Carriers.

E. Carrier Costs

Each Carrier shall bear sole responsibility for all costs and expenses incurred by it in connection with the preparation of its proposal and (if applicable) the consummation of the transaction contemplated by this RFP, including any costs related to any third party representation engaged by the Carrier.

IV CARRIER SUBMISSION AND NEGOTIATION PROCESS

A. Process

1. **Questions and Answers.** Prospective Carriers will be given a chance to submit written questions regarding any aspect of this RFP. The Authority will endeavor to answer all questions in writing, but reserves the right not to respond. Questions and answers will be distributed to all parties that requested this RFP in writing.
2. **Submissions.** All Carrier submissions must be received by Mr. Stephen J. Hines, Chief Development Officer for the Authority, 10 Park Plaza, Suite 4160, Boston, Massachusetts 02116 by the submission date shown below. Any submissions received after that date will be returned unopened.
3. **Preliminary Evaluation.** The Authority will first review all submissions to determine if they contain the required forms and if submittal requirements are met. Failure to submit specified forms and follow submittal requirements may result in the proposal being rejected.
4. **Negotiations.** The Authority will negotiate with Carriers individually, several Carriers, or all Carriers, at its sole discretion. The Authority reserves the right to begin, interrupt, or continue, suspend, and/or discontinue negotiations with any individual Carrier at any time.
5. **Revised submissions.** The Authority may seek revised or supplemental proposals from Carriers based on negotiations with other Carriers and/or the final Vendor Lease Agreement.

B. Schedule

The schedule for the submission of proposals and negotiation process is shown below. The Authority reserves the right to change or amend this schedule at any time at its sole discretion. Dates after the release of the RFP that contemplate action by the Authority are approximate and are subject to change in the Authority's discretion. Prior to the submission date, all parties who have received a copy of this RFP will be notified in writing of any changes. Subsequent to the proposal submission date, only respondents who have submitted responses prior to the deadline will be notified, in writing, of changes.

Preliminary Designation of Selected Vendor	January 23, 2003
Release of this RFP	January 30, 2003
Questions due from Carriers	February 13, 2003
Responses to questions due from Authority	February 24, 2003
Carrier submissions due	March 6, 2003
Authority Finalizes and Executes Carrier Lease Agreements with Carriers following Authority Board Approval of Carrier Lease Agreements	April 30, 2003

Selected Vendor and Carriers Execute Vendor Maintenance Agreements	April 30, 2003
Authority and Selected Vendor Finalize Vendor Lease Agreement following Authority Board approval of Vendor Lease Agreement	Prior to or concurrently with the Authority's execution of Carrier Lease Agreements
Commencement of Construction by Selected Vendor	May 15, 2003

C. Carrier Submissions

Carrier submissions will highlight to the Authority those Carriers that are interested in providing wireless services within the Central Artery Tunnels. They will provide background information to the Authority about the interested Carriers and serve as a starting point for negotiating the rental rate and other terms and conditions of the Carrier Lease Agreements, as well as the terms of the Vendor Maintenance Agreements. They are not intended to be competitive bids. Any Carrier that fails to make a submission in accordance with the terms hereof may lose the opportunity to provide service in the CA/T Project and will not have the opportunity to participate in negotiating the provisions of the Carrier Lease Agreements and Vendor Maintenance Agreements. All Carriers will enter into a Carrier Lease Agreement and a Vendor Maintenance Agreement in forms to be provided by the Authority.

The Authority reserves the right to negotiate any and all aspects of the Carrier Lease Agreements and Vendor Maintenance Agreements.

V RESERVATIONS AND CONDITIONS

A. General Reservations

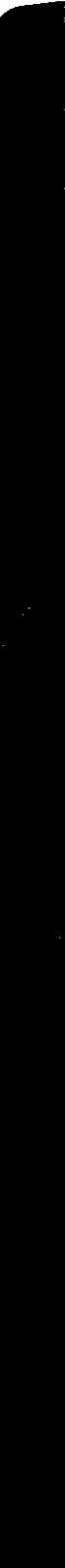
- 1) The Authority makes no representations or warranties as to the accuracy, correctness, currency, and/or completeness of any and all of the information provided in or pursuant to this RFP. The furnishing of information by the Authority shall not create or be deemed to create any obligation or liability upon it for any reason whatsoever and each Carrier, by providing a submission to the Authority in response to this RFP, expressly agrees that it shall not hold the Authority, any agent or contractor thereof, or the Commonwealth of Massachusetts liable or responsible therefor in any manner whatsoever.
- 2) The Authority reserves the right to extend, suspend, supplement, withdraw, or amend this RFP for any reason or for no reason at any time. The Authority reserves the right to change the submission or negotiation process or schedule to address changes in conditions or in the pool of Carriers.
- 3) The Authority reserves the right to discontinue its negotiations with any Carrier, reject any submission, or terminate the entire RFP process for any reason whatsoever or for no reason, prior to the execution of the Carrier Lease Agreements and/or Vendor Maintenance Agreements.
- 4) The Authority reserves the right to reject any submission that does not include all requested schedules, or that is not submitted in conformance with this RFP, or that contains responses to the submission requirements set forth in Section III of this RFP which are not satisfactory to the Authority, or to reject any and all submissions, in its sole discretion, for any reason or for no reason. The Authority further reserves the right to waive or decline to waive irregularities in any submission when it determines that it is in the Authority's best interest to do so.
- 5) The Authority reserves the right to negotiate any and all aspects of the Carrier Lease Agreement and the Vendor Maintenance Agreement and specifically reserves the right to request additional information or revised proposals from Carriers.
- 6) If any matter or circumstance under this RFP requires the consent or approval of the Authority or that such matter be satisfactory to the Authority, then same may be granted, withheld, denied or conditioned by the Authority in the exercise of its sole discretion.
- 7) The Authority reserves the right to change its designation of the Selected Vendor at any time prior to the execution of the Vendor Lease Agreement.
- 8) The Authority reserves the right to terminate the Vendor Lease Agreement at any time in accordance with its terms, and if it so desires, designate another Selected Vendor and enter into a Vendor Lease Agreement with such substitute Selected Vendor.
- 9) In the event that (a) the Authority terminates the Vendor Lease Agreement in accordance with its terms or fails to enter into a Vendor Lease Agreement with the Selected Vendor for any reason whatsoever, (b) the Authority fails to sign Carrier Lease Agreements with Carriers willing to fund into escrow the Vendor Construction Amount, or (c) the Authority signs such Agreements with such Carriers but any or all of the Carriers fail to fund their full share of such Amount, then, in either case, the Authority may elect to terminate any and all executed Carrier Lease Agreements and/or the Vendor Lease Agreement. In such circumstances, the Fee Deposit described in Section III-D shall not be refundable to any Carrier.

B. Severability

If for any reason, any section or provision of this RFP or any addendum to it is determined to be illegal, invalid, or unenforceable under present or future laws or regulations, then the remainder of this RFP shall not be affected thereby.

C. Conflict of Interest, Collusion

- 1) By submitting a proposal, a Carrier certifies that no relationship exists between the Carrier and the Authority or any officer, employee, or agent of the Authority that constitutes unfair competition or a conflict of interest or that may be adverse to the Authority.
- 2) By submitting a proposal, a Carrier certifies that it has not acted in collusion with any other respondent (Vendor or Carrier) or other entity doing business or proposing to do business with the Authority in a way that would constitute unfair competition or that may be adverse to the Authority.



Appendix A: Description of CA/T Project Facilities

Provided below is a narrative description of the facilities comprising the three phases of the CA/T Project. Carriers who are interested in more detailed information about the roadways and tunnels, including, but not limited to, interior conditions, utility locations, clearance heights, and other dimensions, may obtain from the Authority schematic plans of each phase of the CA/T Project, as discussed in Section I-C of the RFP.

Phase I: Seaport Access Road

Mainline and ramp tunnels. The Seaport Access Roadway ("Roadway") or extension of the Massachusetts Turnpike (I-90 Eastbound and Westbound), is a multiple lane roadway that extends I-90 to Logan Airport in East Boston, via the TWT. The Roadway consists of several ramps, including the High Occupancy Vehicle (HOV) Eastbound and Ramp A; Ramp L; I-90 Eastbound; I-90 Westbound; Ramp B; Ramp C; Ramp D; Ramp F; and Ramp I. The Roadway tunnel sections begin at the I-90/I-93 interchange immediately west of Dorchester Avenue, cross beneath the Fort Point Channel and emerge or transition as boat sections and/or surface roadways in the vicinity of D Street in South Boston, and eventually convey traffic to the TWT. The following section identifies each tunnel ramp associated with the Seaport Access Roadway.

- **Ramp D**
Length: 3,600 +/- linear feet
- **Ramp F**
Length: 800 +/- linear feet
- **I-90 Eastbound**
Length: 5,300 +/- linear feet
- **Ramp L**
Length: 4,100 +/- linear feet
- **High Occupancy Vehicle (HOV) Eastbound**
Length: 4,880 +/- linear feet
- **I-90 Westbound**
Length: 5,370 +/- linear feet
- **Ramp C**
Length: 400 +/- linear feet
- **Ramp I**
Portion to at-grade streets in South Boston: 900 +/- linear feet
Portion that merges with I-90 Eastbound: 1,100 +/- linear feet

- **Ramp B**
Length: 710 +/- linear feet
- **Ramp A**
Length: 1,000 +/- linear feet

Typical interior conditions. The I-90 Eastbound and Westbound tunnel interiors consist of two (2) 12-foot wide travel lanes in both the eastbound and westbound directions and walkways along both sides of the traveled way. The air intake or supply ducts are located beneath the travel lanes and the exhaust ducts are located within the tunnel ceiling. The other tunnels, including Ramps L and D, contain air intake and exhaust ducts along the tunnel walls. Interior features include concrete ceilings, a minimum of 17 feet – 3 inches in height, and direct applied tile walls.

Availability of conduit, power and telephone. Within the roadway and major ramps, there generally are two (2) spare 3-inch communications conduits; in minor ramps, typically there is one (1) spare 3-inch communications conduit. In all cases, the Selected Vendor must install a plenum rated innerduct within the available conduit prior to installing their fiber optic or coaxial cable. The Selected Vendor is responsible for verifying that spare conduit is available. The communication pull boxes are located within the median walkway of I-90 Eastbound and within the outside tunnel wall of I-90 Westbound. For the remaining ramps the pull boxes are located on the north side of the eastbound ramps and the south side of the westbound ramps. The fire detection and alarm, closed-circuit television (CCTV), tunnel lighting, emergency lighting and 120VAC power pull boxes are located within the tunnel ceiling. Power is available within the utility rooms and ventilation buildings. Telephone service is available within the vent buildings.

Potential equipment room locations. Potential equipment room locations include tunnel utility rooms, ventilation buildings and vendor-supplied at-grade weatherproof enclosures. The Selected Vendor will be responsible for determining the availability of such space for all the above mentioned locations, on a case-by-case basis. Based on the Selected Vendor's space requirements and potential availability of space, all such requests must be submitted to the Authority for review and approval prior to installation.

Utility rooms. Along the Seaport Access Roadway, there are 33 subsurface utility rooms, the majority of which are located between the Eastbound and Westbound tunnels. The rooms contain equipment for monitoring and controlling vehicular traffic and are equipped with AC power. Fiber optic cable, connecting the main equipment to the remote equipment in the utility room, must be installed along the tunnel roadway within the spare communications conduit designated by the Authority. The Selected Vendor is responsible for verifying that spare conduit is available. If spare conduit is not available, the Selected Vendor must install surface-mounted FRE or RGS conduit to support this installation. The remote equipment would then be connected to the antenna system via the tunnel utility rooms.

NOTE: Some utility rooms located between I-90 eastbound and westbound tunnel sections provide a physical connection or cross passage between eastbound and westbound roadways. These shared utility rooms should be utilized to the greatest extent possible, allowing the

Selected Vendor to split the signal at the utility room and feed both northbound and southbound tunnels from the same room.

Ventilation buildings provide mechanical, electrical and control equipment necessary to provide ventilation, power, and lighting to the tunnels. Fresh air will be blown through ducts under the roadbed or in a tunnel wall and circulated through the tunnels by fans housed in the ventilation buildings. At the same time, vehicle exhaust will be carried out of the tunnel through openings in the ceiling to rooftop exhaust stacks in the ventilation buildings and dispersed into the atmosphere. Ventilation buildings typically serve both eastbound and westbound roadway sections. Potential available space within the ventilation buildings is located throughout the building, within closets or in larger rooms that may be dedicated or caged off. The final location of available space will be based on factors such as not precluding access to CA/T Project facilities and/or adhering to building code safety regulations. The Selected Vendor will be responsible for determining the availability of such space for all locations, on a case-by-case basis. Based on the Selected Vendor's space requirements and potential availability of space, all such requests must be submitted to the Authority for review and approval prior to installation. In addition, a small dish or antenna array could be located on the roof of a vent building.

In addition to the suggested CO, VB6, there are two above-grade ventilation structures associated with the Seaport Access Roadway Tunnels, referred to as Ventilation Buildings #1 and 5. Ventilation Building #1 is located along Dorchester Avenue on the eastern side of the Fort Point Channel, immediately south of the South Postal Annex. The 90-foot high building consists of a basement and three floors above grade that contain electric and mechanical workshops, air supply ducts, an oil tank room, telephone security and radio equipment rooms, standby generator room, battery room, standby switchgear rooms and a fire pump room. Ventilation Building #5 is located between Summer Street and Northern Avenue, just south of the East Service Road. The subgrade levels of the structure contain electrical and radio equipment rooms and the four above-grade levels consist of fan rooms and a Boston Fire Department command room.

At-grade weatherproof enclosures. Within the Authority's right of way, there are areas where the Selected Vendor may wish to locate outdoor equipment enclosures. These enclosures would be at grade, and require outdoor locked cabinets to support equipment installation. Power and telecommunications connections would also be required at these locations. The Selected Vendor will be responsible for installing the enclosure and ancillary equipment.

Phase II: Northbound Artery

Mainline and ramp tunnels. The I-93 Northbound Tunnel conveys traffic from points south, west and east to points north, as it crosses over the Charles River as the Leonard Zakim Bridge. The following section identifies each tunnel roadway and ramp associated with the Northbound Artery.

- **CANB Central Artery Northbound (Mainline)**

Length: 8,000 +/- linear feet

- **Ramp DN**

Length: 150 +/- linear feet

- **Ramp C**

Length: 950 +/-linear feet

- **Ramp A-CN**

Length: 630 +/-linear feet

- **Ramp R-T**

Length: 1,300 +/- linear feet

- **Ramp A-CN / R-T**

Length: 2,035 +/- linear feet

- **Ramp CN-SA**

Length: 1,400 +/- linear feet

- **Ramp ST-S**

Length: 925 +/-linear feet

- **Ramp ST-CN**

Length: 1,000 +/-linear feet

- **Ramp ST-SA**

Length: 600 +/-linear feet

- **Ramp CN-S**

Length: 595 +/-linear feet

- **Ramp SA-CN**

Length: 1,650 +/-linear feet

- **Ramp S-N**

Length: 630 +/-linear feet

Typical interior conditions. The Northbound Artery tunnels consist of four (4) 12'-0" wide travel lanes. The air intake or supply ducts are located beneath the travel lanes and the exhaust ducts are located within the tunnel ceiling. The nominal minimum roadway clearance for Northbound I-93 is 17'-0". For the ramp sections the nominal minimum roadway clearance is 14'-6". The exhaust depth sets the bottom of ceiling elevation. Interior features include precast concrete ceilings and direct applied tile walls.

Availability of conduit, power and telephone. Within the roadway and major ramps, there generally are two (2) spare 3-inch communications conduits; in minor ramps typically there is one (1) spare 3-inch communications conduit. In all cases, the Selected Vendor must install a plenum rated innerduct within the available conduit prior to installing their fiber optic or coaxial cable. The communication pull boxes are located within the median walkway along I-93 North and along the west side of the remaining northbound ramps. The IPCS, TV, TNL and emergency lighting pull boxes are located within the tunnel ceiling. Power is available within the utility rooms and ventilation buildings. Telephone service is available within the vent buildings.

Potential equipment room locations. Potential equipment room locations include tunnel utility rooms, ventilation buildings and vendor-supplied at-grade weatherproof enclosures. The Selected Vendor will be responsible for determining the availability of such space for all the above mentioned locations, on a case by case basis. Based on the Selected Vendor's space requirements and potential availability of space, all such requests must be submitted to the Authority for review and approval prior to installation.

Utility rooms contain equipment for monitoring and controlling vehicular traffic and are equipped with AC power. Along I-93 Northbound there are 17 subsurface utility rooms. All of the utility rooms are equipped with AC power. Fiber optic cable, connecting the main equipment to the remote equipment room, must be installed along the tunnel roadway within the spare communications conduit designated by the Authority. The Selected Vendor is responsible for verifying that spare conduit is available. If spare conduit is not available, the Selected Vendor must install surface-mounted FRE or RGS conduit to support this installation. The remote equipment would then be connected to the antenna system via the tunnel utility room.

NOTE: Some utility rooms located between I-93 Northbound and Southbound tunnel sections provide a physical connection or cross passage between northbound and southbound roadways. These shared utilities rooms should be utilized to the greatest extent possible, allowing the Selected Vendor to split the signal at the utility room and feed both northbound and southbound tunnels from the same room.

Ventilation buildings provide mechanical, electrical and control equipment necessary to furnish ventilation, power, lighting and control for the tunnels. Fresh air will be blown through ducts under the roadbed or in a tunnel wall and circulated through the tunnels by fans housed in the ventilation buildings. At the same time, vehicle exhaust will be carried out of the tunnel through openings in the ceiling to rooftop exhaust stacks in the ventilation buildings and dispersed high into the atmosphere. Ventilation buildings typically support both northbound and southbound roadway sections. Potential available space within the ventilation buildings is located throughout the building, within closets or in larger rooms which will be caged off. The final

location of available space will be based on factors such as not precluding access to CA/T Project facilities and/or adhering to building code safety regulations. The Selected Vendor will be responsible for determining the availability of such space for all locations, on a case by case basis. Based on the Selected Vendor's space requirements and potential availability of space, all such requests must be submitted to the Authority for review and approval prior to installation. In addition, a small dish or antenna array could be located on the roof of a vent building.

Ventilation Building #3, adjacent to I-93 Northbound along Atlantic Avenue, provides air intake and exhaust for both the northbound and southbound tunnels. This building consists of a basement and three floors above grade that contain electric and mechanical workshops, air supply ducts, an oil tank room, telephone security and radio equipment rooms, standby generator room, battery room, standby, switchgear rooms and a fire pump room.

At-grade weatherproof enclosures. Within the Authority right of way, there are areas where the vendor may wish to locate outdoor equipment enclosures. These enclosures would be at grade, requiring outdoor locked cabinets to support equipment installation. Power and telecommunications connections would also be required at these locations. The Selected Vendor would be responsible for installing the enclosure and ancillary equipment.

Phase III: Southbound Artery

Mainline and ramp tunnels. The I-93 Southbound Tunnel section extends from the I-90 Seaport Access Roadway interchange to Causeway Street in the vicinity of the Fleet Center. I-93 South continues over the Charles River as the Leonard Zakim Bridge. The following section identifies each tunnel ramp associated with the Southbound Artery.

- **CASB Central Artery Southbound (Mainline)**

Length: 3,300 +/- linear feet

- **Ramp I-90 Collector**

Length: 3,400 +/-linear feet

- **Ramp RR**

Length: 350 +/-linear feet

- **Ramp CS-P**

Length: 1,550 +/- linear feet

- **Ramp SA-CS**

Length: 1,000 +/- linear feet

- **Ramp CS-CT**

Length: 450 +/- linear feet

- **Ramp SA-CT**

Length: 850 +/- linear feet

- **Ramp CS-SA**

Length: 1,000 +/- linear feet

- **Ramp L-CS**

Length: 1,230 +/- linear feet

Typical interior conditions. The I-93 Southbound Artery tunnels consist of four (4) 12'-0" wide travel lanes. The air intake or supply ducts are located beneath the travel lanes and the exhaust ducts are located within the tunnel ceiling. The nominal minimum roadway clearance for the Southbound Artery is 17'-0". For the ramp sections the nominal minimum roadway clearance is 14'-6". The exhaust depth sets the bottom of ceiling elevation. Interior features include precast concrete ceilings and direct applied tile walls.

Availability of conduit, power and telephone. Within the roadway and major ramps, there generally are two (2) spare 3-inch communications conduits; in minor ramps there typically is one (1) spare 3-inch communications conduit. In all cases, the Selected Vendor must install a plenum rated innerduct within the available conduit prior to installing their fiber optic or coaxial cable. The communication pull boxes are located within the median walkway along I-93

Southbound and along the east side of the remaining Southbound ramps. The IPCS, TV, TNL and emergency lighting pull boxes are located within the tunnel ceiling. Power is available within the utility rooms and ventilation buildings. Telephone service is available within the vent buildings.

Potential equipment room locations. Potential equipment room locations include tunnel utility rooms, ventilation buildings and at-grade weatherproof enclosures to be supplied by the Selected Vendor. The Selected Vendor will be responsible for determining the availability of such space for all the above mentioned locations, on a case-by-case basis. Based on the Selected Vendor's space requirements and potential availability of space, all such requests must be submitted to the Authority for review and approval prior to installation.

Utility rooms contain equipment for monitoring and controlling vehicular traffic and are equipped with AC power. Along I-93 Southbound there are 11 subsurface utility rooms. Fiber optic cable, connecting the main equipment to the remote equipment room, must be installed along the tunnel roadway within the spare communications conduit designed by the Authority. The Selected Vendor is responsible for verifying that spare conduit is available. If spare conduit is not available, the Selected Vendor must install surface mounted FRE or RGS conduit to support this installation. The remote equipment would then be connected to the antenna system via the tunnel utility room.

NOTE: Some utility rooms located between I-93 Northbound and Southbound tunnel sections provide a physical connection or cross passage between northbound and southbound roadways. These shared utility rooms should be utilized to the greatest extent possible, allowing the Selected Vendor to split the signal at the utility room and feed both northbound and southbound tunnels from the same room.

Ventilation buildings provide mechanical, electrical and control equipment necessary to furnish ventilation, power, lighting and control for the tunnels. Fresh air will be blown through ducts under the roadbed or in a tunnel wall and circulated through the tunnels by fans housed in the ventilation buildings. At the same time, vehicle exhaust will be carried out of the tunnel through openings in the ceiling to rooftop exhaust stacks in the ventilation buildings and dispersed high into the atmosphere. Ventilation buildings typically support both northbound and southbound roadway sections. Potential available space within the ventilation buildings is located throughout the building, within closets or in dedicated areas of larger rooms which could be caged off. The final location of available space will be based on factors including, without limitation, not precluding access to CA/T Project facilities and/or adhering to building code safety regulations. The Selected Vendor will be responsible for determining the availability of such space for all locations, on a case-by-case basis. Based on the Selected Vendor's space requirements and potential availability of space, all such requests must be submitted to the Authority for review and approval prior to installation. In addition, a small dish or antenna array could be located on the roof of the vent building.

There are two above-grade ventilation structures adjacent to the Southbound Artery Roadway Tunnels, that provide fresh air supply and exhaust for both northbound and southbound tunnels. Ventilation Building #4 is located along Congress Street on the western side of the Central

Artery, just north of Faneuil Hall. The building contains electric and mechanical workshops, air supply ducts, an oil tank room, telephone security and radio equipment rooms, standby generator room, battery room, standby, switchgear rooms and a fire pump room. Ventilation Building #8 is located between Causeway Street and Accolan Way, just south of the Charles River. The structure contains electrical and radio equipment rooms, fan rooms and a Boston Fire Department command room.

At-grade weatherproof enclosures. Within the Authority's right of way, there are areas where the Selected Vendor may wish to locate outdoor equipment enclosures. These enclosures would be at grade, requiring outdoor locked cabinets to support equipment installation. Power and telecommunications connections would also be required at these locations. The Selected Vendor will be responsible for installing the enclosure and ancillary equipment.

Appendix B: Existing and Planned CA/T Project Radio Frequencies

I. Two-Way Radio

All two-way radio channels for the TWT (CA/T Project Construction Contract C22A1) and all planned two-way radio channels for other phases of the CA/T Project (Construction Contract C22A2) are listed below.

A. CA/T C22A2 Two Way Radio

Agency	RF ID #	Freq. in MHz
Boston Police Department (BPD) Area A	T11 / R11	470.7875 / 473.7875
Emergency Medical Services (EMS) Tactical 1	T12 / R12	462.950 / 467.950
EMS Primary Dispatch	T13 / R13	462.975 / 467.975
EMS Ch4	T14 / R14	463.075 / 468.075
EMS Ch5	T15 / R15	463.100 / 468.100
EMS Ch8	T16 / R16	463.175 / 468.175
BAPERN	T17 / R17	470.7875 / 473.7875
Boston Fire Department (BFD) -1	T18 / R18	483.1625 / 486.1625
BFD2	T19 / R19	483.1875 / 486.1875
BFD-3	T20 / R20	483.2125 / 486.2125
BFD-4	T21 / R21	483.2375 / 486.2375
Mobil Data Terminal	T22 / R22	851.6375 / 806.6375
Massachusetts Bay Transit Authority	T36 / R36	483.5625 / 486.5625
Interagency Tact 1	T52 / R52	866.5125 / 821.5125
Interagency Call-In	T53 / R53	866.0125 / 821.0125
Massachusetts State Police (MSP)- 1	T54 / R54	856.7125 / 811.7125
MSP-2	T55 / R55	856.7375 / 811.7375
MSP-3	T56 / R56	857.9875 / 812.9875
MSP-4	T57 / R57	859.7125 / 814.7125
MSP-5	T58 / R58	859.9625 / 814.9625

B. TWT C22A1 Two-Way Radio

Agency	RF ID #	Freq. in MHz
Mass Highway (Installed inactive)	T1 / R1	47.14 / 47.14 (Not Active)
EMS-11-1	T2 / R2	155.28 / 155.28
EMS-11-2	T3 / R3	155.28 / 155.34
Massachusetts Turnpike Authority (MTA) MSP Troop-E	T4 / R4	159.03 / 156.03
MTA Maintenance	T5 / R5	159.24 / 156.24
BPD -1	T6 / R6	460.35 / 465.35
BPD-2	T7 / R7	46.45 / 465.45
EMS Tactical	T8 / R8	462.95 / 467.95
EMS Dispatch	T9 / R9	462.975 / 467.975
EMS-1	T10 / R10	Void
EMS-2	T11 / R11	Void
EMS-3	T12 / R12	Void
EMS-4	T13 / R13	463.075 / 468.075
EMS-5	T14 / R14	463.1 / 468.1
EMS-6	T15 / R15	Void
EMS-7	T16 / R16	Void

EMS-8	T17 / R17	463.175 / 468.175
BFD-1	T18 / R18	483.1625 / 486.1625
BFD-2	T19 / R19	483.1875 / 486.1875
BFD-3	T20 / R20	483.2125 / 486.2125
BFD-4	T21 / R21	483.2375 / 486.2375
Mobile Data-1	T22 / R22	851.6375 / 806.6375
Mobile Data-2	T23 / R23	853.5625 / 808.5625
Metropolitan District Commission (MDC)-10	T24 / R24	856.7125 / 811.7125
MDC-9	T25 / R25	856.7375 / 811.7375
MDC-8	T26 / R26	857.9875 / 812.9875
MDC-7	T27 / R27	859.7125 / 814.7125
MDC-6	T28 / R28	859.9625 / 814.9625
MDC-5	T29 / R29	859.9875 / 814.9875
MDC-4	T30 / R30	860.7125 / 815.7125
MDC-3	T31 / R31	860.7375 / 815.7375
MDC-2	T32 / R32	860.9625 / 815.9625
MDC-1	T33 / R33	860.9875 / 815.9875
Intra-2	T34 / R34	866.0125 / 821.0125
Intra-1	T35 / R35	866.5125 / 821.5125
MBTA	T36 / R36	483.5625 / 486.5625
MTA MSP E-Troop (Surface)	ST4 / SR4	159.03 / 156.24
MTA Maintenance (Surface)	ST5 / SR5	159.24 / 156.24

Notes:

1. There are four Carriers currently operating within the TWT. The frequencies that these Carriers utilize are not shown above. The Selected Vendor must include these frequencies within its study if the System is incorporated into the TWT. The Carriers currently operating in the TWT are AT&T Wireless, Verizon Wireless, Sprint, and Voicestream.
2. There are some pending Engineering Change Notice (ECN) requests to the C22A2 plan, made by Boston Police Department (BPD) and the Massachusetts Bay Transit Authority (MBTA). Specifically, BPD has requested to change BAPERN (RF ID# T17/R17) to a new frequency (MHz) and MBTA has requested to replace its 400 MHz UHF (RF ID# T36/R36) with 800 MHz trunk system. Information updated per the ECN's will be provided to the Selected Vendor when available.

II. AM/FM Rebroadcast Radio

The following AM and FM stations are available for reception within the TWT and will be available throughout all Central Artery Tunnels upon completion of the IPCS System:

AM

590 WEZE	950 WROL	1360 WLYN
680 WRKO	1030 WBZ	1430 WXKS
740 WJIB	1090 WILD	1510 WNRB
850 WEEI	1260 WPZE	1600 WUNR

FM

88.1 WMBR	92.9 WBOS	98.5 WBMX	104.1 WBCN
88.9 WERS	93.7 WEGQ	100.7 WZLX	105.7 WROR
89.7 WGBH	94.5 WJMN	101.7 WFNX	106.7 WMJX
91.9 WUMB	95.3 WHRB	102.5 WCRB	107.9 WXKS
90.9 WBUR	96.9 WSJZ	103.3 WODS	

NOTE: These are the selected rebroadcast frequencies for the TWT, based on an adequate signal level received with FM antennas mounted on the roofs of VB6 and Vent Building 7. The set of CA/T Project rebroadcast signals will depend on receiving adequate levels at various vent buildings. It is the Authority's intent to have a common set of rebroadcast frequencies throughout the entire System so that received channels are consistent and uninterrupted during travel.

Appendix C: Selected Vendor's Proposal

Attached are relevant portions of the Selected Vendor's proposal that describe the System to be installed in the Central Artery Tunnels. Note that certain portions of the attached pages have been stricken. Note further that the stricken provisions were not considered by the Authority during its evaluation of the Vendors' proposals due to a change in scope by the Authority, and they therefore should not be considered by interested Carriers during their review of this RFP.

MIDAS System

Overview

This document describes the fiber-based distributed antenna system required to meet the criteria in the Request for Proposals Central Artery Tunnel Wireless Project for multi-operator/multi-technology coverage within the Massachusetts Turnpike Authority Central Artery Tunnel, Boston, MA using Mikom's MIDAS solution.

The proposed MIDAS system will cover requirements for present and planned technologies within the 800 and 1900 frequency bands used for mobile wireless communications, including CDMA, TDMA, LMR, DCS, IDEN, GSM, WCDMA, and UMTS. The ranges 806-894 MHz and 1850-1990 MHz define the working frequency spectrums for this system. There is sufficient capacity in the system to meet the current and future needs of the carriers based on surveys conducted with several of them.

Future expansion into new technologies and frequency bands, including the newly FCC released 3G spectrum, is possible using the proposed fiber backbone and either the addition of a simple module to the equipment (as is the case for WLAN) or the addition of new stand-alone equipment for those new frequencies not yet licensed or technologies not yet developed.

~~This proposal also includes options for the Public Safety Systems operating in 800, 450 and 150 MHz frequency bands. The details are in the Public Safety section of this proposal.~~

The MIDAS system is very flexible and can be expanded to accommodate any future expansion into the Ted Williams Tunnel, Prudential, CANA Tunnels, and other areas. It was designed in a star configuration such that each remote unit has a direct connection back to the master unit without using any optical or RF splitters. This allows each carrier to sectorize the system individually for their use without affecting the other carriers, and it provides an easy means of interleaving the remotes for redundancy for Public Safety's use.

~~The MIDAS system utilizes an SNMP-based Operations and Maintenance Center (OMC) for monitoring and controlling the equipment. Several users can access the system to varying security levels, and the OMC can be accessed via a LAN or WAN utilizing Ethernet, a PSTN phone line, or a wireless phone when used in conjunction with Ethernet routers and Ethernet modems. There is also a separate Local Maintenance Terminal at the headend for monitoring and controlling the equipment locally.~~

Coverage was designed in the public roadways at a minimum on-street mobile receive level of - 80 dBm or better. This level will ensure there is sufficient in-vehicle coverage while also providing overlapping coverage between the remote units in case of equipment outages.

This proposal is based on using two side-by-side MIDAS dual-band fiber-based distributed antenna systems. The wireless carriers would be divided between the two dual-band systems with selected PCS and all Trunking carriers on one half of the system, and the other PCS carriers and all Cellular carriers on the other. The reason for the two systems is that the highest uplink frequency for the cellular band is too close to the lowest downlink frequency in the trunking band to effectively prevent feedback through the system. Separating the trunking and cellular



automatically levels the downlink RF signals present at the Remote Unit to ensure that each operator is operating at the designed level. This eliminates the need to re-level the system as new channels are added to it, and it reduces the potential for interference between the carriers since one can't operate above the designed level. An automatic threshold alarm (ALC) will occur if the transmit or receive levels are too high. There is also a function to reduce the power transmitted and received at each Remote Unit using built-in attenuators, which can be used to optimize the network as a whole.

The MIDAS Master Unit and Remote Unit components shown in the previous drawing are replicated for each remote unit in operation as part of the star configuration. This configuration increases reliability, as each Master Unit-Remote Unit set is separate from the other Master Unit-Remote Unit sets. A failure on one component affects only that set, not the others. There is no single point of failure within the system.

The Master Unit communicates with each Remote Unit using a 10.7 MHz supervisory signal that is transmitted/received with the wireless frequencies over the single fiber. This allows the Remote Units to be accessed locally via the Local Maintenance Terminal (LMT) or remotely using the SNMP-based Operations and Maintenance Center (OMC) software. The remote connection to the OMC shall be accomplished using standard "always on" LAN connections.

~~Both the LMT and the OMC poll the Master and Remote Units for status, record current settings, and log alarms. Any alarms are forwarded to the remotely located maintenance staff for action. The LMT is also used to auto-setup the units after replacement to reduce mean time to repair (MTTR). Up to four external alarms can be connected to the Remote Unit using simple relay contacts to monitor other functions, such as the activation of a fire or flooding alarm. The following alarms are monitored in the MIDAS network:~~

Alarm Message	Description
Optical RX alarm	Optical receive failure (no input)
Optical TX alarm	Optical transmit failure
Auto-leveling	Optical loss has changed
Amplifier current DL1	Amplifier current too high or too low
Amplifier current DL2	Amplifier current too high or too low
ALC alarm DL	Output power too high
ALC alarm UL	Input power too high
Temperature alarm	Temperature out of range
I2C bus failure	Internal communications bus failure
PSU 12 V	Power supply 12V failure
PSU 28 V	Power supply 28V failure
PSU mains	Power supply mains failure
Fan	Fan out of order
External alarm 1	Option for supervision of external components
External alarm 2	Option for supervision of external components
External alarm 3	Option for supervision of external components
External alarm 4	Option for supervision of external components

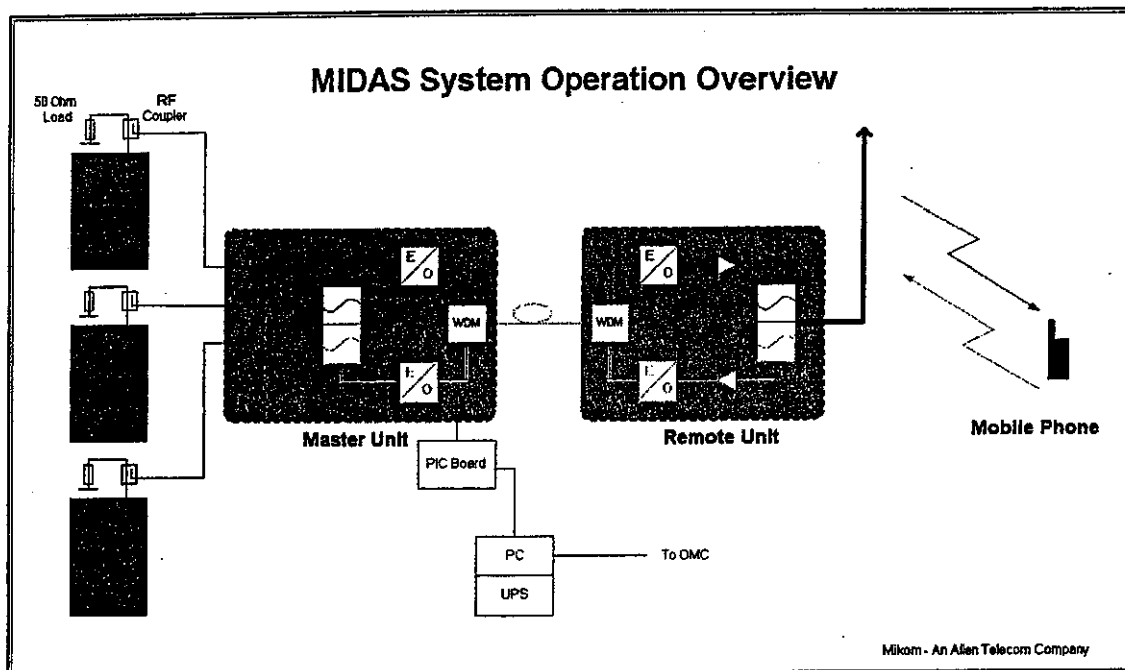


operations eliminates the potential for intermodulation problems. Installing the antennas a specific distance apart vertically and/or horizontally further isolates the trunking and cellular systems.

MIDAS System Description

In the MIDAS network, RF couplers, terminations, and coaxial cable are used to connect the radio equipment to the MIDAS Master Unit at the head-end location. In the Central Artery/Tunnel Project, this location is the subbasement of Vent Building 6. There are variable attenuators in the Master Unit for each radio equipment connection so that each carrier can be optimally tuned to operate in the system. The radio equipment transmit (downlink) RF signal at the head-end is converted to an optical signal by the master unit. The optical signal is transported over single-mode fiber to a MIDAS Remote Unit where it is converted back to an RF signal, amplified, and then transmitted using standard coaxial cable and antennas.

In the radio equipment receive (uplink) path, the received signal from the mobile is amplified before being converted to an optical signal and transported back to the master unit location using the same optical fiber. At the master unit, the signal is converted back to a RF signal and carried via coaxial cable to the BTS. The following diagram illustrates this process.



MIDAS System for One Remote Unit (Single Frequency Band is Shown)

The MIDAS equipment utilizes optical wave division multiplexing (WDM) at 1310 and 1550 nm to combine the uplink and downlink signals to allow one fiber to be used instead of two, thus saving material costs. Additionally, the equipment has an auto-leveling function that



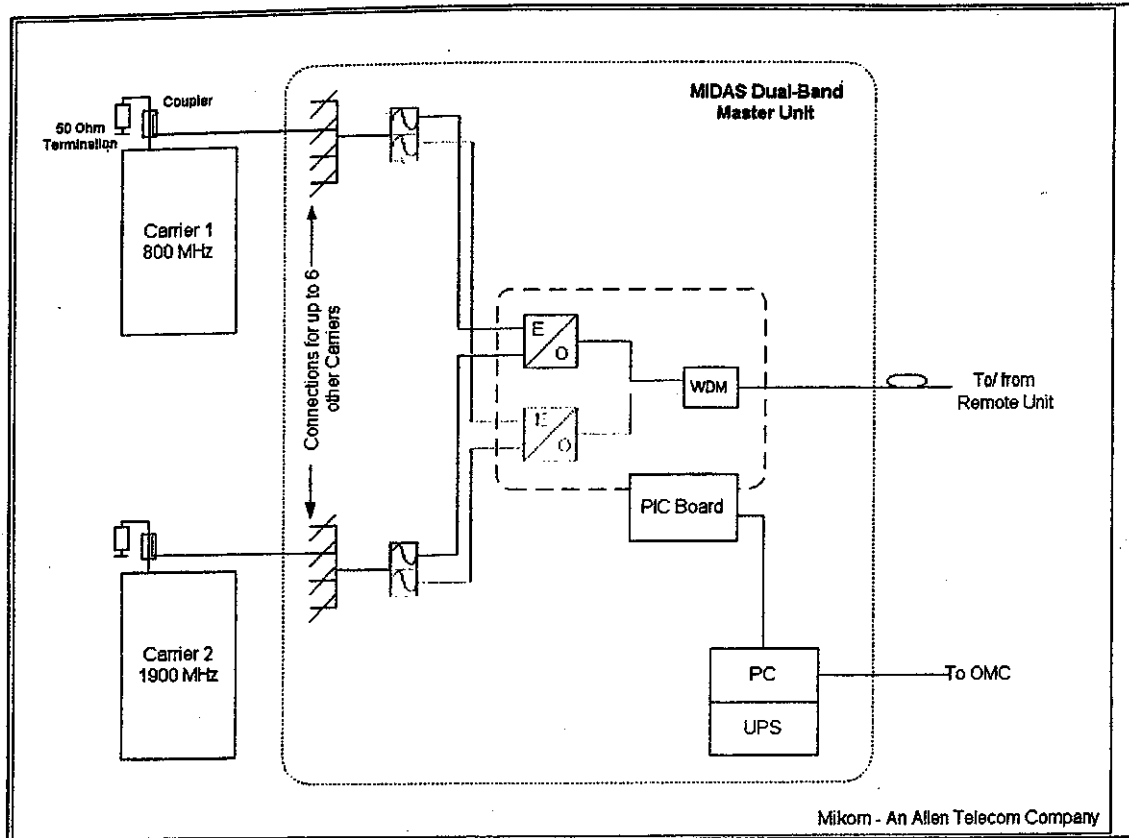
The MIDAS Remote Units can be mounted against a wall, attached to a pole, or located inside another enclosure, such as a lamppost. Each MIDAS Remote Unit has a fan housing with two fans on top to control the temperature inside the unit. The fans sense the temperature inside the unit and automatically adjust their speeds to cool the units as required. Power consumption is reduced since the fans only operate as needed. Under most operational conditions only one fan is required, only at extreme high temperatures are both fans required for operation. Under fan failure conditions, each amplifier contained in the Remote Unit has an auto-shutdown to prevent any damage to the Remote Unit.

MIDAS Dual-Band 800/1900 Operation

In a multi-operator environment, consideration must be given to the separation between the cellular and trunking bands. The highest uplink frequency for the cellular band is 2 MHz from the lowest downlink frequency in the trunking band, which can cause interference in any shared system. Separating the trunking and cellular equipment is therefore required, and this includes the antenna and coaxial cable used. Vertical separation between the trunking and cellular antennas is generally more effective than horizontal separation because of antenna radiation patterns, which put the maximum gain in the horizontal direction. 1900 MHz PCS systems can operate with either the cellular or trunking band to create a dual-band system.

The proposed MIDAS system for the Central Artery/Tunnel Project uses two dual-band 800/1900 systems to alleviate the cellular-trunking interference issue. Up to four wireless operators in each frequency band (for a total of 8 carriers) can use each system without the need for additional equipment in the Master Unit. As there are only 2 cellular and 6 PCS licenses, this provides sufficient room for the current commercial licensees. In the case of trunking and Public Safety, there are expected to be more than 4 radio cabinets to each Remote Unit, and the radio cabinets can be combined outside of the Master Unit using off-the-shelf RF splitters to provide the extra connection points. The diagram shown on the next page illustrates how the 800 MHz (cellular or trunking) frequency is combined with the 1900 MHz frequency at the MIDAS Master Unit.

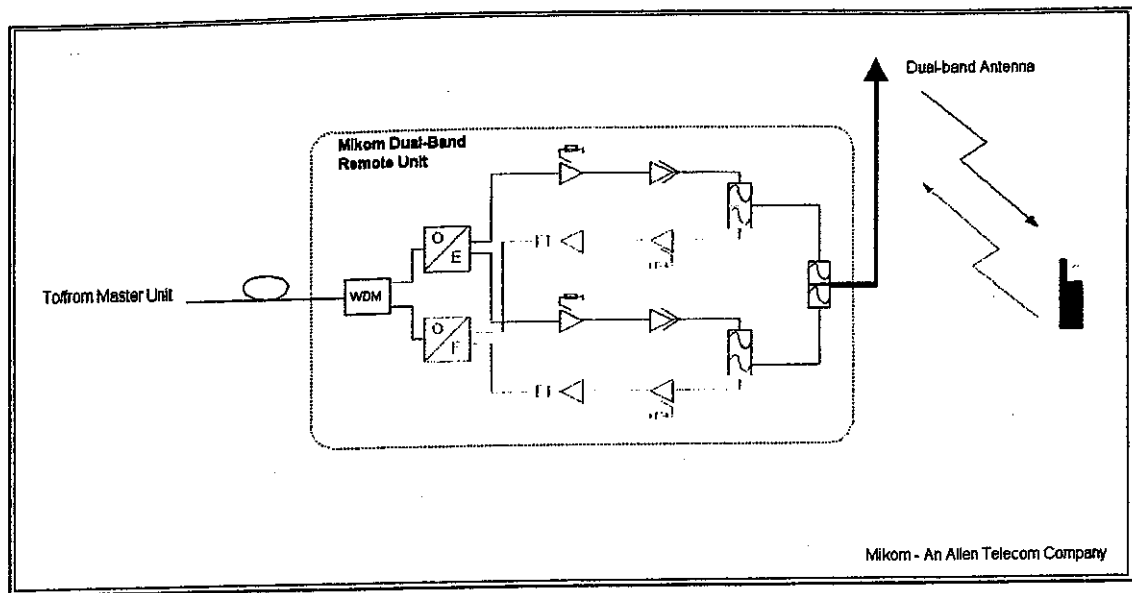




MIDAS Dual-Band Master Unit

The MIDAS Remote Unit uses separate amplifiers for each frequency band to allow for the maximum power per channel possible. Each amplifier path also has a variable attenuator available to individually tune the Remote Unit and optimize the MIDAS network as a whole or in specific areas, such as near ramps. A duplexer recombines the frequencies to share the same dual-band antenna. The diagram that follows shows how this is accomplished.





MIDAS Dual-Band Remote Unit

The dual-band 800/1900 MIDAS equipment has all of the remote monitoring and control functions described previously. A specification sheet for the MIDAS equipment is included as Attachment A, and Attachment B is the specification sheet for the proposed 800/1900 multi-band bidirectional antenna proposed.

There are multi-operator MIDAS networks in Zurich, Switzerland; London, England; Cardiff, Wales; and Augsburg, Germany, currently using this technology. The system in London includes a third-generation UMTS operator, and there are plans for adding 3G operators on the Cardiff network. Previous generation dual-band MIDAS equipment is installed in San Francisco, CA; Las Vegas, NV; and Los Angeles, CA, and Mikom has other shared systems using its low-power BriteCell optical equipment in Atlanta, GA; New Orleans, LA; and a new system under construction in Dallas-Fort Worth, TX.

MIDAS Capacity

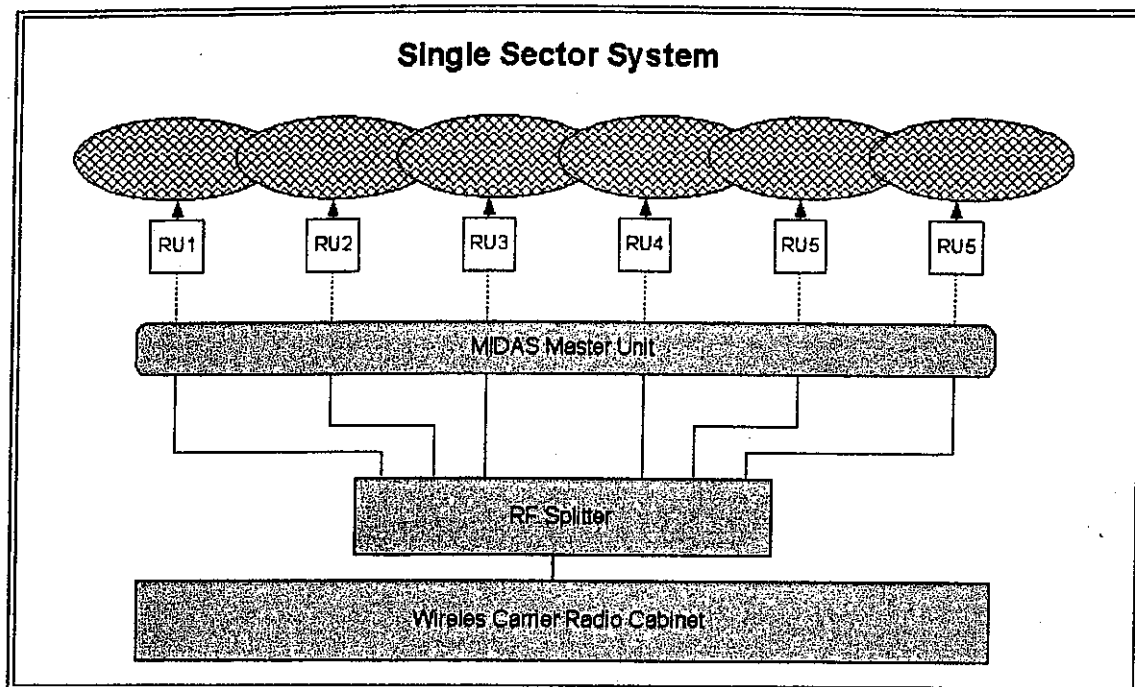
The proposed MIDAS system for the Central Artery/Tunnel Project has been designed with the following capacity at each Remote Unit. *41 units*

- Trunking – 32 analog or iDEN channels
- Cellular – 32 channels (CDMA, TDMA, or combination of both)
- PCS – 32 CDMA carriers and 24 TDMA/GSM channels

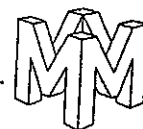
Sectorizing the Remote Units can accommodate additional channels and system redundancy. For example, a carrier can begin service with a single sector of radio channels over a given number of Remote Units and then later allocate specific Remote Units to different radio groups as shown in the following two diagrams to increase overall capacity in the Tunnels. This is

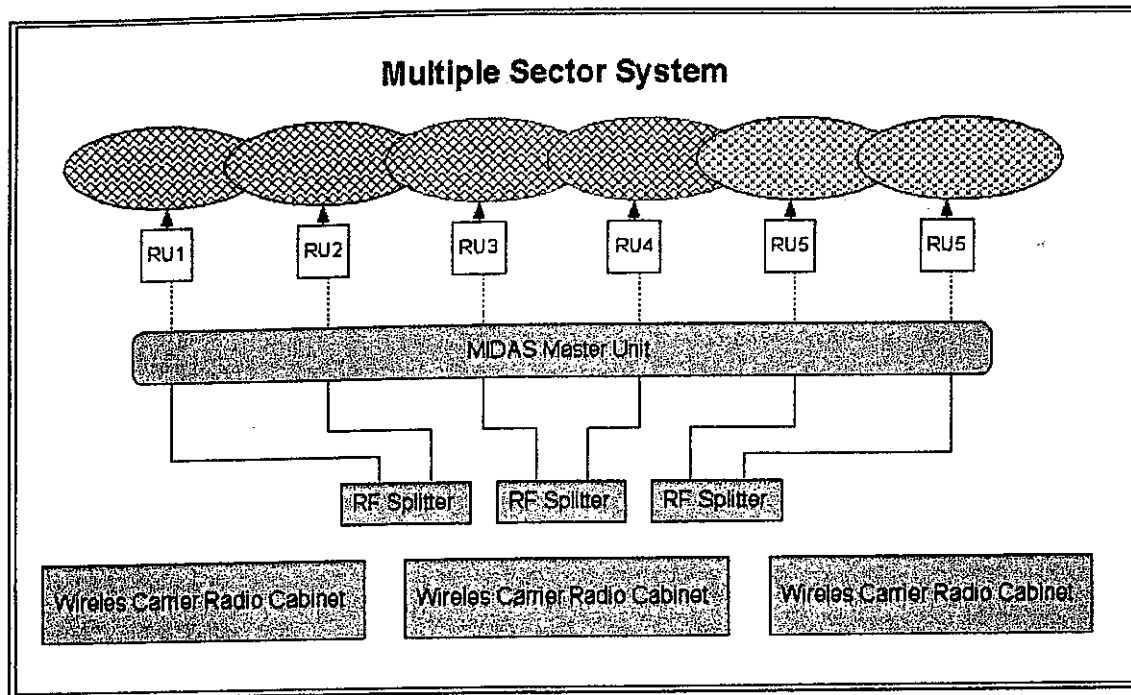


accomplished by changing the RF splitters at the headend location only. No access is needed at the Remote Units.



Single Sector MIDAS System

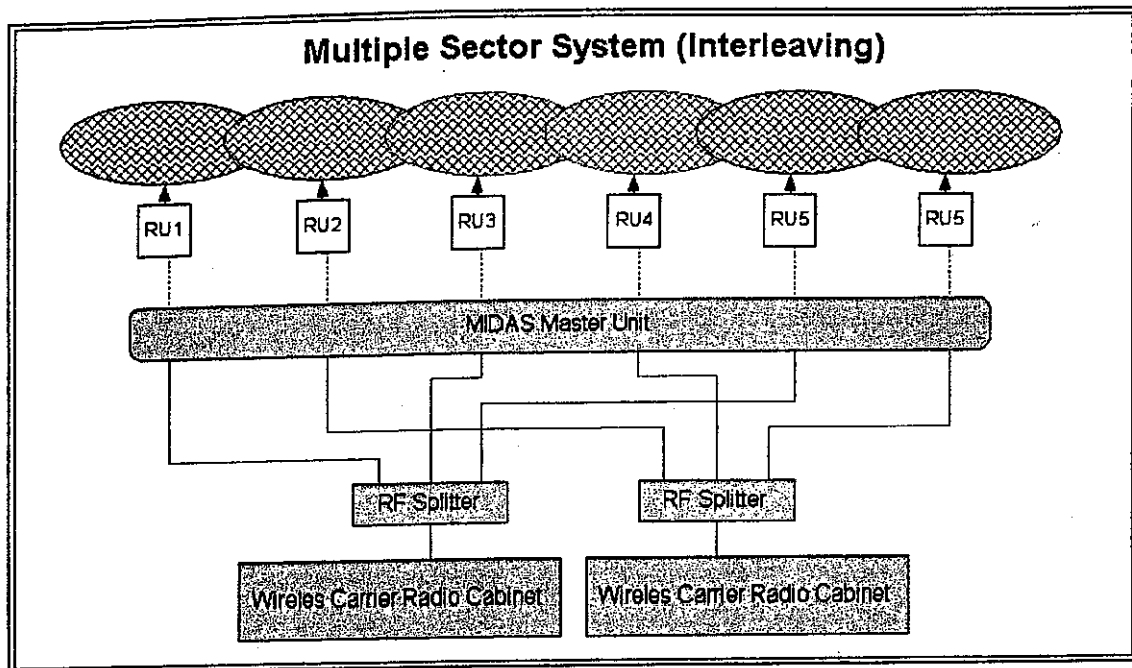




Multiple Sector MIDAS System

This type of flexibility has also been used to increase system reliability in case of radio equipment outages. Interleaving Remote Units fed by different radio cabinets is a common means of ensuring that service is available in the event of a radio equipment failure in the Public Safety sector that utilize distributed antenna systems. This is shown in the diagram that follows.





Interleaved Multiple Sector MIDAS System

Eventually, a wireless carrier could use one radio cabinet per Remote Unit for capacity if needed. For the purpose of providing consistent service to all of the wireless carriers on the system, the carriers will be limited to a maximum of 8 MIDAS Remote Units per sector. Adding more than 8 Remote Units will negatively affect the uplink call quality in comparison to the other carriers operating within that boundary. Reducing the number of Remote Units per radio cabinet can improve uplink quality for a carrier.

Proposed MIDAS Performance

The proposed MIDAS network has been designed for a minimum on-street mobile receive signal strength of -80 dBm or better. This level allows for effective in-vehicle coverage while minimizing the amount of equipment required. While the number of antennas and individual coaxial cable lengths may vary, a link budget for the system is included as Attachment C. The worst-case scenario for the Remote Unit configurations is shown although the number of antenna points per Remote Unit and the coaxial cable lengths may vary.

The Remote Unit locations and the link budget were created to provide overlapping coverage between the Remote Unit antenna points. This ensures that there is still RF coverage inside the Tunnel in the case of radio equipment failure.



Mikom's current portfolio includes low, medium and high power coverage systems using innovative and proven RF and fiber optic technologies capable of covering multiple bands simultaneously and satisfying any coverage or capacity enhancement challenges. Mikom's tunnel system installations include the Ted Williams, Callahan and Sumner Tunnels here in Boston. International tunnel installations have been completed in Berlin, Hanover and Munich, Germany as well as in Chile, Switzerland and France. In each installation Mikom prides itself on providing a system that meets or exceeds the project requirements and is delivered on time and within the established budget.

System Design and Compliance

Our team certifies that the proposed system, described herein, shall comply with the requirements of the Massachusetts Turnpike Authority's Request for Proposal, to that end, the proposed system is as follows.

The proposed system to be constructed utilizes the MIDAS MMR 800_1900 equipment, which will cover the requirements for present and planned technologies within the 800 and 1900 frequency bands used for mobile wireless communications. This includes CDMA, TDMA, LMR, DCS, IDEN, GSM, WCDMA and UTMS. The ranges of 806-894 MHz and 1850-1990 MHz define the working frequency spectrums for this system. Based on surveys and meetings conducted with the carriers, the proposed system provides ample capacity for current and future needs. Further, future expansion into new technologies and frequency bands, including the FCC's newly released 3G spectrum, is possible using the proposed fiber backbone and either installing a simple module or adding stand-alone equipment for frequencies not yet licensed or technologies not yet used. There are additional options included in this proposal for Public Safety, WLAN, and Paging as well.

The proposed system installation contemplates the construction of a multi-fiber, fiber optic backbone with fiber optic laterals to the proposed equipment locations within the tunnels. The fiber backbone provides redundancy and spare capacity anticipating the future needs of the carriers and developing technologies. At each equipment room, there are two remote MIDAS dual band fiber distributed antenna units. It is proposed that the carriers be divided among the two units – trunking and selected PCS on one half, cellular and other PCS on the other half. This arrangement creates a physical separation that eliminates the potential for intermodulation problems.

Another feature of the system design is in the location of the remote units. Coverage was designed at a minimum on-street mobile receive level of -80 dBm with overlapping coverage between remote units. Though Mikom's remote units are extremely reliable, this overlap has been built into the system design to ensure that minimal interruption (if any) will occur if a remote unit is not operational. This not only enhances the carrier coverage, capacity and reliability, it allows for ease in routine scheduled maintenance of the remote units. Design overlap also minimizes coverage disruption while replacing or upgrading the remote units – anticipating new technology integration at some point in the future.



Other system design features include:

- SNMP based operations and maintenance center (OMC) for monitoring and controlling the equipment.
- Auto leveling function to automatically level the downlink RF signal to ensure each carrier is operating at the designed level.
- Battery back up for a minimum of two hours at master and remote units.
- Sectorizing capability of the remote units.

Carrier Endorsement

Maverick and Mikom have actively sought the input of carriers during the design of this neutral host wireless system. Central office layout, remote unit selection, antennas and redundancy design have all been reviewed with several carriers.

Our team boasts a client list that includes, AT&T Wireless, AT&T, Sprint PCS, Cingular, Verizon, Nextel, Voicestream, British Telecom, NSTAR Communications, NEESCom, RCN, XO Communications, Sprint, and the Town of Norwood.



Appendix D: Executive Order 390

[THE COMMONWEALTH OF MASSACHUSETTS LETTERHEAD]
[EXECUTIVE DEPARTMENT]

By His Excellency

WILLIAM F. WELD
GOVERNOR

EXECUTIVE ORDER NO 390

ESTABLISHING AN AFFIRMATIVE MARKET PROGRAM IN PUBLIC CONTRACTING

WHEREAS, The Commonwealth has an affirmative responsibility to develop and maintain equitable practices and policies in the public marketplace;

WHEREAS, a diverse business community strengthens the state economy and is beneficial to all of the citizens of the Commonwealth;

WHEREAS, in 1990, the Massachusetts Commission Against Discrimination conducted hearings and investigations which documented a history of discrimination against minorities and women in the Commonwealth, and in 1994, the Executive Office of Transportation and Construction produced a Disparity Study which documented a history of discrimination against minority and women owned businesses, in which the Commonwealth's agencies were participants;

WHEREAS, this discrimination against minorities and women currently affects the utilization of minority and women owned businesses in state contracting;

WHEREAS, the Commonwealth has a compelling interest in redressing the effects of past discrimination through the utilization of the available and qualified pool of minority and women owned businesses;

NOW, THEREFORE, I, WILLIAM F. WELD, Governor of the Commonwealth of Massachusetts, by virtue of the authority vested in me as Supreme Executive Magistrate, and Lieutenant Governor ARGEO PAUL CELLUCI, do hereby order as follows:

Section 1. Declaration of Policy. It is the policy of the Commonwealth to promote equality in the market and, to that end, to encourage full participation of minority and women owned businesses in all areas of state contracting, including contracts for construction, design, goods and services.

Section 2. Affirmative Market Plans. The Commonwealth has a compelling interest in using racial and gender based classifications for the purposes of remedying past discrimination and promoting other, non-remedial objectives such as the delivery of effective human services in the areas of public health, safety and welfare.

Subject to the approval and direction of the Secretary of Administration and Finance, all executive offices, agencies, departments, boards and commissions of the Commonwealth (hereinafter referred to as "Agency" or "Agencies") are hereby directed to implement the narrowly tailored affirmative market program set forth in this Executive Order which shall include race and gender conscious goals where necessary to eliminate disparity between minority or women owned businesses (M/WBEs) and other business entities in the relevant market, defined as the Commonwealth of Massachusetts.

For purposes of this Executive Order, "minority" shall be defined as a permanent resident of the U.S. operating a business within the Commonwealth who is black, Western Hemisphere Hispanic, Asian, American Indian, or Cape Verdean, and a "Minority Business Enterprise" (MBE) as a minority business certified by the State Office of Minority and Women Business Assistance (SOMWBA) or another state Agency. A "Woman Business Enterprise" (WBE) shall be a business certified as such by SMWBA or another state Agency.

Goals for M/WBE participation in state funded contracts shall be based upon the broadest and most inclusive pool of available M/WBEs capable of performing the contracts and interested in doing business with the Commonwealth in the areas of construction, design, goods and services. SOMWBA, or its successor, shall create and maintain a current directory of certified M/WBEs which will serve as one source of information in determining the pool of available M/WBEs. Goals shall be established by the Secretary of Administration and Finance, or his/her designee, and shall be expressed as overall annual program goals, applicable to the total dollar amount of an Agency's contracts awarded during the fiscal year for each of the Agency's types of contracts. The goals established in Section 1.2 of Executive Order 237 shall remain in effect until revised goals are developed pursuant to this Executive Order, which shall occur promptly, but in no event later than January 1, 1997. Goals developed pursuant to this Executive Order shall be revised as necessary for the fiscal year beginning July 1, 1997 and at least every two years thereafter.

The Secretary of Administration and Finance, or his/her designee, shall develop a procedure by which Agencies may, for an individual contract, adjust the goals for M/WBE participation (whether the goals are established pursuant to Executive Order 237 or pursuant to this Executive Order) based upon actual availability, geographic location of the project, the contractual scope of work or other relevant factors.

The Secretary of Administration and Finance, and his/her designee, shall develop a good faith efforts waiver procedure by which Agencies may determine, at any time prior to the award of the contract, that compliance with the goals is not feasible and by which Agencies may reduce or waive the goals for an individual contract.

Recognizing the importance of joint ventures and partnerships involving M/WBEs in increasing the participation of M/WBEs in state contracting, the Secretary of Administration and Finance, or his/her designee, shall develop guidelines and procedures for Agencies to follow in contracting with such entities. Such guidelines and procedures shall seek to encourage the development of joint ventures and partnerships for the purpose of contracting with the Commonwealth.

In connection with the affirmative market program SOMWBA shall regularly review and, where necessary, modify its certification process to ensure that it operates effectively, and shall report annually to the Secretary of Administration and Finance.

Section 3. Capacity Development. The Massachusetts Office of Business Development (MOBD), or its successor, is hereby designated the state Agency responsible for providing a capacity development program to M/WBEs and other interested businesses seeking to do business with the Commonwealth. The capacity development program shall include, but is not limited to, the following core areas of business development: strategic planning, financial management planning, human resource management and planning, information technology access and management, and marketing.

MOBD shall report annually to the Secretary of Administration and Finance on its progress in assisting M/WBEs and other businesses.

Contracting Agencies of the Commonwealth shall supplement the capacity development program provided by MOBD with industry specific assistance, training, education and procurement information.

Section 4. Program Oversight, Enforcement and Reporting Requirements. The Secretary of Administration and Finance shall be responsible for the overall management, monitoring and enforcement of the program established pursuant to this Executive Order. A Program Director shall be designated within the Executive Office of Administration and Finance to assist in program development, coordination and compliance. A Director of Enforcement shall be designated within the Executive Office of Administration and Finance with responsibility for monitoring contract compliance across all Agencies, addressing potential program violations and coordinating Agency enforcement activities with SOMWBA and the Attorney General.

Each Secretary and Agency head shall designate a highly placed individual charged with management of this program. Each Secretary and Agency head may designate such other personnel as they deem necessary to support the implementation, monitoring and enforcement of this program and the coordination of those functions. Each Secretariat shall ensure that Agencies establish, subject to guidelines developed by the Secretary of Administration and Finance and his/her designee, special provisions that serve as governing standards for contract compliance. It is the intention of this Executive Order that the principles underlying the affirmative market program be incorporated into the fabric of general management in state government.

Each Secretariat shall report annually to the Secretary of Administration and Finance on the effectiveness of the program, including a report of the total dollar amounts awarded and actually paid to M/WBEs in all areas of state contracting. The Secretary of Administration and Finance shall report annually, within ten weeks of the issuance of the Annual Financial Report by the Office of the Comptroller, to the Minority and Women Business Enterprise Oversight Committee established by this Executive Order and to the Governor.

Section 5. Minority and Women Business Enterprise Oversight Committee. The Secretary of Administration and Finance shall appoint a Minority and Women Business enterprise Oversight Committee, not to exceed twenty members, which shall assist the Secretary in the implementation of this Executive Order. Oversight Committee members shall serve for two year terms, except that in the initial appointments, one half shall be appointed to one year terms, and one half shall be appointed to two year terms. Members may serve a maximum of three (3) full two year terms.

Section 6. Independent Authorities and Public Institutions of Higher Learning. Independent authorities and public institutions of higher learning are encouraged to adopt M/WBE policies and programs consistent with this Executive Order.

Section 7. Sunset Provision. The Executive Office for Administration and Finance shall review the program described in this Executive Order at least every five years. The review shall determine: whether the objectives are being met; whether the conditions giving rise to the Order continue to exist; whether race and gender neutral measures are capable of addressing the effects of discrimination without the other measures specified in the Order; and whether the program described in the Order should be modified or sunsetted.

Section 8. Effective Date. With the exception of the goal component of the affirmative market program, as set forth in Section 2 of this Executive Order, all provisions of this Executive Order are effective immediately. The goal component of Executive Order 237, as set forth in Section 1.2 of Executive Order 237, shall remain in effect until revised goals are developed pursuant to Section 2 of this Executive Order, but in no event shall it remain in effect beyond January 1, 1997. All other provisions of Executive Order 237 are hereby immediately revoked.

Given at the Executive Chamber
in Boston this 6 day of Aug. in
the year one thousand nine hundred
and ninety-six.

s/a
William F. Weld, Governor
Commonwealth of Massachusetts

s/a
Argeo Paul Cellucci, Lieutenant
Governor
Commonwealth of Massachusetts

[SEAL]

s/a
William Francis Galvin
Secretary of the Commonwealth

GOD SAVE THE COMMONWEALTH OF MASSACHUSETTS

Schedule A: Carrier Rent Proposal Form

Note: Each Carrier must submit an individual Rent Proposal Form. Carriers should attach additional sheets to the Proposal Form if necessary.

Carrier Rent Proposal Form

Reference is herein made to a certain Request for Proposal – Carrier dated January 30, 2003 issued by the Massachusetts Turnpike Authority (the “Authority”) relating to the CA/T Wireless Project (together with all figures, appendices and schedules, the “RFP”). Initial capitalized terms, unless otherwise defined herein, shall have the meanings assigned to such terms in the RFP.

The undersigned (the “Respondent”) affirms that it has read and fully understands the terms and conditions set forth in the RFP, and hereby agrees to the terms and conditions thereof.

Accordingly, the Respondent hereby irrevocably submits this Rent Proposal Form to the Authority subject to the terms and conditions of the RFP. Pursuant to the requirements of Section III of the RFP, the Respondent hereby submits the following required Rent Proposal:

a) Initial Base Rent: \$7.92 per linear foot of space occupied by the Respondent in the System. Base rent shall increase annually based upon the change in CPI but in no event by less than 2.5% per annum nor more than 5% per annum. Base rent (not including the annual adjustment set forth above) shall be approximately \$223,027.20 per annum for Phase I (approximately 28,160 linear feet), approximately \$157,330.80 per annum for Phase II (approximately 19,865 linear feet) and approximately \$103,989.60 per annum for Phase III (approximately 13,130 linear feet).

b) System Use (Respondent’s projected number of channels to be used or reserved for use): _____

c) Use-Based Rent (Respondent’s proposed rates for use-based rent based on the number of channels projected or reserved for use): _____

i) Description of annual CPI increase provisions: _____

d) Projected Growth of System Use Over Term of Carrier Lease Agreement: _____

e) Cash Flow (Show annual amortization of System Costs (including initial costs and upgrades); base rent, as escalated each year based on assumed CPI; projected use-based rent, as escalated each year based on assumed CPI; and total annual rent to the Authority): _____

In completing the Rent Proposal Form, all Carriers should assume that each Carrier will be responsible for not less than 1/6th of the costs to construct and maintain the System. By suggesting that the Carriers make the foregoing assumption, the Authority in no way is bound to agree to such a cost allocation method in the Carrier Lease or Vendor Maintenance Agreements.

The Respondent herewith submits a Fee Deposit in the amount of One Hundred Thousand Dollars (\$100,000.00) which shall be held and disposed of in accordance with Section III-D of the RFP, and acknowledges that it shall be responsible for its share of the Fully Earned Payment as determined in accordance with the RFP.

Executed under seal by the duly authorized _____ of the Respondent:

Name of Respondent: _____

Signature: _____ Date: _____, 2003

Print Name: _____

Title: _____

Schedule B: Certification of Affirmative Action Compliance

Statement of Non-Discrimination Policy

I, _____, the duly authorized _____ of _____ (the "Respondent"), recognize that when practices and policies in employment and public access, regardless of their intent, discriminate against any group of people on the basis of race, color, religious creed, national origin, ancestry, sex, sexual orientation, age, disability, or Vietnam era veteran status, specific affirmative action should be taken, including the utilization of transition plans, goals and timetables to ensure opportunity and to overcome the effects of previous discrimination.

The Respondent prohibits discrimination in employment and public access on the basis of race, color, religious creed, national origin, ancestry, sex, secular orientation, age, disability, or Vietnam era veteran status.

The Respondent is committed to utilizing minority and women business enterprises in its daily operations, including the operations responsible for preparing the proposal in response to the Request for Proposal - Carrier dated January 30, 2003 issued by the Massachusetts Turnpike Authority relating to the CA/T Wireless Project.

Executed under seal by the duly authorized _____ of the Respondent:

Name of Respondent: _____

Signature: _____ Date: _____

Print Name: _____

Title: _____

Schedule C: Additional Certifications

Reference is herein made to a certain Request for Proposal – Carrier dated January 30, 2003 issued by the Massachusetts Turnpike Authority (the “Authority”) relating to the CA/T Wireless Project (together with all figures, appendices and schedules, the “RFP”). Initial capitalized terms, unless otherwise defined herein, shall have the meanings assigned to such terms in the RFP.

Chapter 66A (Confidentiality and Privacy)

The undersigned (the “Respondent”) acknowledges that, during the response and selection process for the RFP and, if selected as a highest responsible Respondent, the Respondent's performance under the Vendor Maintenance Agreement or Carrier Lease Agreement, as applicable, the Respondent may acquire or obtain access to “personal data” and become a “holder” of such “personal data” (as defined in Chapter 66A of the Massachusetts General Laws (“Chapter 66A”)) or other information deemed confidential by the Authority. The Respondent shall comply with Chapter 66A and any applicable regulations promulgated thereunder relative to confidentiality and privacy.

Chapter 62C, Section 49A (Tax Compliance)

Pursuant to M.G.L. Chapter 62C, Section 49A, the Respondent hereby certifies (a) under the pains and penalties of perjury that the Respondent is in full compliance with all laws of the Commonwealth of Massachusetts relating to taxes, reporting of employees and contractors and withholding and remitting child support and (b) to the best of its knowledge and belief, it has no outstanding payment or filing obligations to the Commonwealth of Massachusetts Department of Revenue.

Secretary of State Certificates/Annual Reports Certification

The Respondent certifies under the pains and penalties of perjury that the Respondent has filed with the Secretary of State all certificates and annual reports required by law.

Conflict of Interest/Collusion Certification

The Respondent certifies under the pains and penalties of perjury that (a) no relationship exists between the Respondent and the Authority or any officer, employee, or agent of the Authority that constitutes unfair competition or a conflict of interest or that may be adverse to the Authority; and (b) it has not acted in collusion with any other Respondent or other entity doing business with the Authority in a way that would constitute unfair competition or that may be adverse to the Authority. For purposes hereof, the term “Respondent” shall mean the respondent; any director, principal, officer, partner, owner of an equity interest in the respondent, employee, agent or representative of the respondent; or any partnership, corporation or other entity with which any of the foregoing is or has been affiliated.

Signed under the pains and penalties of perjury on this ____ day of _____, 2003 by the duly authorized _____ of the Respondent:

Name of Respondent: _____

Signature: _____

Print Name: _____

Title: _____

Schedule D: Clerk's Certificate

(Applicable to all Corporations)

I, _____, being the clerk of _____, hereby certify that the Proposal submitted herewith has been authorized by the board of directors of said corporation, and that the above signatures are those of duly authorized agents and/or officers of same.

Date: _____

Clerk

CORPORATE SEAL

Schedule E: Chapter 7, Section 40J Disclosure Statement

DISPOSITION OF REAL PROPERTY

For the purposes of disclosure pursuant to the Massachusetts General Laws, Chapter 7, Section 40J, the undersigned (the "Respondent") does hereby provide the following statement giving the true names and addresses of all persons who have or will have a direct or indirect beneficial interest in the real property defined as the "CA/T Wireless Project" in that certain Request for Proposal – Carrier dated January 30, 2003 issued by the Massachusetts Turnpike Authority. If there are no such persons, the Respondent has indicated this by inserting the word "NONE" in the space below.

Name

Address

_____	_____
_____	_____
_____	_____

Note: If necessary, please attach additional names and addresses on a separate sheet of paper referencing this Statement.

This Disclosure Statement is signed under the pains and penalties of perjury on this ____ day of _____, 2003 by the duly authorized _____ of the Respondent:

Name of Respondent: _____

Signature: _____ Date: _____

Print Name: _____

Title: _____

Massachusetts Turnpike Authority
Request for Proposals - Carrier
Central Artery Tunnel Wireless Project

Addendum 1
February 28, 2003

The following additions and clarifications are hereby made to the "Request for Proposals - Carrier, Central Artery Tunnel Wireless Project" (together with all figures, appendices, and schedules attached thereto, the "RFP") issued by the Massachusetts Turnpike Authority (the "Authority") on January 30, 2003. The primary purpose of this Addendum 1 is to extend by approximately one (1) week the deadline for the Authority's responses to questions to the RFP and to extend by approximately two (2) weeks the deadline for submissions of Carrier proposals in response to the RFP. This Addendum 1 is hereby made a part of the RFP. To the extent there is any conflict or inconsistency between this Addendum 1 and the text of the original RFP, the language of this Addendum shall govern. In all other respects the content and requirements of the RFP remain unchanged. Terms defined in the RFP shall have the same meaning in this Addendum. References to section, subsection, part, subpart, paragraph, subparagraph or page numbers are to those in the RFP unless otherwise noted.

- A. Section I, "Introduction", Subsection A, "The CA/T Wireless Project", p. 1. The first sentence of the seventh paragraph of this subsection is replaced in its entirety with the following:

Carrier submissions must be submitted by 12:00 p.m., local time, on March 21, 2003 at the Authority's offices at Ten Park Plaza, Suite 4160, Boston, Massachusetts.

- B. Section III, "Carrier Submission Requirements", Subsection A, "General", p. 8. The fourth sentence of the second paragraph of this subsection is replaced in its entirety with the following:

Proposals must be received by the Authority's Chief Development Officer at Ten Park Plaza, Suite 4160, Boston, Massachusetts by 12 noon, local time, on March 21, 2003.

- C. Section IV, "Carrier Submission and Negotiation Process", Subsection B, "Schedule", p. 13. This subsection is replaced in its entirety with the following:

The schedule for the submission of proposals and selection process is shown below. The Authority reserves the right to change or amend this schedule at any time at its sole discretion. Dates after the release of the RFP that contemplate action by the Authority are approximate and are subject to change in the Authority's discretion. Prior to the submission date, all parties who have received a copy of this RFP in writing will be notified in writing of any changes. Subsequent to the proposal submission date, only respondents who have submitted responses prior to the deadline will be notified, in writing, of changes.

Preliminary Designation of Selected Vendor	January 23, 2003
Release of this RFP	January 30, 2003
Questions due from Carriers	February 13, 2003
Responses to questions due from Authority	February 28, 2003
Carrier submissions due	March 21, 2003

Authority Finalizes and Executes Carrier Lease Agreements with Carriers following Authority Board Approval of Carrier Lease Agreements	May 5, 2003
Selected Vendor and Carriers Execute Vendor Maintenance Agreements	May 5, 2003
Authority and Selected Vendor Finalize Vendor Lease Agreement following Authority Board approval of Vendor Lease Agreement	Prior to or concurrently with the Authority's execution of Carrier Lease Agreements
Commencement of Construction	May 15, 2003

Addendum No. 1 to CA_T Wireless Carrier RFP.DOC

**Massachusetts Turnpike Authority
Request for Proposals
CA/T Wireless Project - Carrier RFP**

Appendix E: Answers to Questions

February 28, 2003

This Appendix E: Answers to Questions relates to and is hereby made a part of the "Request for Proposals -- Carrier, Central Artery Tunnel Wireless Project" issued by the Massachusetts Turnpike Authority (the "Authority") on January 30, 2003 (together with all figures, appendices, and schedules attached thereto, the "RFP"). Below are all written questions received by the Thursday, February 13, 2003 deadline stated in the RFP, along with the Authority's answers. To the extent that the Authority's answers alter the intent or meaning of any part of the RFP, these written answers shall govern.

Questions are shown below numbered and in italics. The questions have been ordered by general topic and grouped together with similar questions. The questions are shown below as they were received, with only minor typographical corrections. The company asking each question is shown in brackets at the end of each question. The Authority's answers are located below each question or group of questions in plain text.

Questions were submitted by the following:

on behalf of:

Cingular Wireless
Nextel Communications
Sprint PCS

by:

Tony Miller
Kelly Lang Baker
Peter Girard

Carrier Agreements and Term

Question 1. The RFP references both a Carrier Lease Agreement and a Vendor Maintenance Agreement. Both agreements are critical to the Carrier submissions. Will the proposed agreements be made available to the Carriers for their review prior to the submission due date? If not, should the Carriers expect that the proposed Carrier Lease Agreement will be substantially similar to the lease agreements already signed by the Carriers for the Harbor Tunnels? [Nextel]

Answer 1. The salient terms of the Carrier Lease Agreement and Vendor Maintenance Agreement are set forth in the RFP. Accordingly, the Authority does not deem it necessary to provide these agreements to the Carriers prior to the submission due date.

Question 2. Pursuant to Section 1 A, Carriers will be required to make Carrier pre-payments to an escrow account to be controlled by the Authority in accordance with a cost allocation method set forth in the Carrier Lease Agreements. Further, it states that the method of cost allocation has not yet been determined. When will the method of cost allocation be determined? [Nextel]

Answer 2. The method for allocating System Installation, System Maintenance and other relevant costs will be determined before the Carrier Lease Agreements are signed.

Question 3. *Section II A Item 5 references the term of the Carrier Lease Agreements. Are the renewals at the option of both the Authority and the individual Carriers or conversely are the Carriers locked into each renewal at the sole option of the Authority? [Nextel]*

Answer 3. At the Authority's option, Carriers will have the opportunity to renew the Carrier Lease Agreements for two additional five-year terms, but will not be required to do so.

Question 4. *Will the Authority consider extensions beyond the 20-year time period? [Nextel]*

Answer 4. The Authority will not consider extensions beyond the 20-year time period set forth in the RFP.

Question 5. *Per Section II A Item 6, what type of security or guarantee does the Authority deem acceptable and in what amount? Specifically, is the Authority contemplating a surety bond, letter of credit, security deposit or something different? [Nextel]*

Answer 5. The Authority would accept any of the forms of security listed in this question.

Question 6. *Section II A Item 9 states "Carriers shall not be permitted to install or operate a complete communications system...." This seemingly prevents Carriers from operating. Please clarify what is meant in by this provision. [Nextel]*

Answer 6. Section II-A-9 of the RFP expresses the central premise of the CA/T Wireless Project: the Maverick/Mikom System is a complete carrier-neutral shared antenna wireless telephone communications system and shall be the only such system within the Central Artery Tunnels. Maverick's exclusive right to install, operate, and maintain the System does not preclude the Carriers from using the System to provide wireless service.

Question 7. *Will the insurance required under Section II A 13 be comparable to that required of the Carriers in the Harbor Tunnels leases? [Nextel]*

Answer 7. The Authority currently envisions that the insurance provisions will be similar, but reserves the right to make changes during the course of the Carrier Lease Agreement negotiation process.

Question 8. *Under Section II A 14, is the indemnification required of each Carrier limited to those claims and liabilities that arise as a result of each Carrier's operation or is it meant to include acts/omissions of third parties? [Nextel]*

Answer 8. The Authority envisions that each Carrier will be liable for those claims and liabilities arising from its operations as well as the operations of its agents, contractors, representatives, and others acting by, through, or under the Carrier.

Question 9. *Section II A Item 19 limits the liability of the Authority. Where the Authority is actively participating in the oversight of the negotiation with the Vendor and the System Installation, can the*

Authority, under Massachusetts law, contract away its liability for negligence and/or gross negligence? [Nextel]

Answer 9. Section II-A-19 reflects the Authority's view that System installation and operation is the responsibility of the Selected Vendor, not of the Authority. The fact that the Authority will perform a limited oversight role in furtherance of public safety in the Central Artery Tunnels does not change what the Authority considers to be a fair and appropriate allocation of liability. The Authority notes that this provision in no way limits or precludes the Carriers from proceeding against the Selected Vendor if necessary.

Question 10. *Section II B Item 1 permits the Vendor, with the Authority's approval, to terminate service. Under what conditions would termination of service be allowed? [Nextel]*

Answer 10. Section II-B-1 allows the Vendor to terminate service, with the Authority's approval, for "specific cause." The Authority envisions that a Carrier's failure to perform its responsibilities under the Vendor Maintenance Agreement would be an example of a reason for which the Vendor might appropriately seek to terminate service.

Question 11. *Shall the agreement between the MTA and Selected Vendor run coterminous with the agreements between the MTA and Carriers? [Cingular]*

Answer 11. The term of the initial Vendor Lease Agreement and the initial Carrier Lease Agreements shall be ten (10) years. It is the Authority's intent that these agreements will be coterminous, but the Authority reserves the right to alter this schedule based on the negotiation process of each agreement.

System Installation Costs

Question 12. *Will the System Escrow Account need to be fully funded by all participating carriers before construction will begin by the Selected Vendor? i.e. each participating carrier's pro rata portion of the proposed \$10,080,732 total system cost? [Sprint]*

Answer 12. Yes. Pursuant to sections II-A-1 and II-A-7 of the RFP, Carriers will be required to prepay all costs of System installation and initial construction into the System Escrow Account.

Question 13. *Pursuant to Section II A Item 1, the Vendor construction amount includes all equipment. Does the term equipment include each Carrier's Base Transceiver Station equipment (electronics, radio equipment)? [Nextel]*

Answer 13. The term "equipment" within Section II-A-1 refers to the neutral host equipment provided by the Vendor. Each Carrier shall be responsible for the purchase and complete installation of its BTS equipment within its individual propriety premises.

Question 14. *Pursuant to Section II A Item 1, the guaranteed maximum System price is not more than \$10,080,732 which amount excludes Authority review and oversight costs. Are the Authority review and oversight costs captured in the \$100,000 per Carrier nonrefundable Fee Deposit and/or \$500,000 Fully Earned Payment or will the Carriers be charged an additional fee for review and oversight? If*

so, will these costs be capped and will the Carriers have an opportunity to review invoices and get an accounting "true-up"? [Nextel]

Answer 14. The Authority's review and oversight costs are not included in the Fee Deposit or the Fully Earned Payment. Accordingly, the Carriers will be charged an additional fee for costs incurred by the Authority in performing review and oversight functions; such fee will not be capped. The Authority will provide an accounting of these costs in a form to be determined.

***Question 15.** Many of the costs and fees (including System Installation Costs, System Maintenance Costs, Use-Based Rent and Fully Earned Payment) and the methods of allocation of each are presently unknown. Per the RFP, the numbers of channels (or frequencies) each Carrier uses/reserves may be a factor in the methods of allocation. If this is a factor in determining the methods of cost allocation and rent, it effectively discriminates against certain Carriers since some Carriers own frequencies with much wider bandwidth than others and hence can accommodate significantly more users. When will the methods of allocation for the various costs and fees be finalized and made public to the Carriers? Is the Authority considering the issue of frequency bandwidth? [Nextel]*

Answer 15. The method for allocating System Installation, System Maintenance and other relevant costs will be determined before the Carrier Lease Agreements are signed.

***Question 16.** Pursuant to Section II A Item 4, each Carrier will receive two channels (or frequencies) for its own use within the system. Does this mean that each Carrier will have two connection points to each remote unit and should additional connection points be required that the Carrier pays for each or does this mean that each Carrier can connect only two channels to reach Remote Unit? As stated earlier, if the latter is intended, this provision effectively discriminates against certain Carriers because some Carriers own frequencies with much wider bandwidth than others and hence can accommodate significantly more users. [Nextel]*

Answer 16. Two channels (or frequencies) will be provided for use by each Carrier as a single sector system throughout the System so that each Carrier will have one uplink and one downlink channel in a single sector scenario.

***Question 17.** Can the MTA provide a capital expenditure breakdown per phase of construction? [Cingular]*

Answer 17. In simple terms, the cost breakdown per phase can be calculated as follows:

Total Linear Feet of Tunnel (including Ramps) = 61,155 lft
Total Linear Feet of Tunnel - Phase 1 = 28,160 lft or 46% of Total
Total Linear Feet of Tunnel - Phase 2 = 19,865 lft or 32% of Total
Total Linear Feet of Tunnel - Phase 3 = 13,130 lft or 22% of Total

Thus, breaking down the overall Vendor Cost of \$10,080,732 by the linear feet percent total per phase, the Authority estimates the following allocation:

Phase 1 = \$4,637,137
Phase 2 = \$3,225,834
Phase 3 = \$2,217,761
Total = \$10,080,732

The Authority notes that this is a simplified breakdown of Vendor costs per phase. Factors such as percent of Central Office build per phase, power, telecommunications connections and other similar work have not been factored into this per phase estimate.

System Maintenance Costs

Question 18. *Is the MTA or the Selected Vendor prepared to share proposed budgets of the System Maintenance Costs? [Sprint]*

Answer 18. Maverick/Mikom's proposed budget for System Operation costs is attached hereto as Exhibit A.

Question 19. *Section II A Item 2 states that the Vendor has proposed to charge an annual fee of 10% to the Carriers for maintaining and repairing the System in addition to being reimbursed for its annual System maintenance and repair costs. Is the annual fee 10% of each Carrier's annual rent, the System Installation cost or some other metric? [Nextel]*

Answer 19. Based on the Selected Vendor's proposal, the annual fee discussed in Section II-A-2 will be 10% of the annual System maintenance and repair costs.

Question 20. *What exactly does the annual fee for maintenance and repairs cover? [Nextel]*

Answer 20. The fee is a standard management fee to the Vendor for overseeing and causing the repair and maintenance of the System.

Question 21. *What maintenance and repair costs are the Carriers expected to reimburse? [Nextel]*

Answer 21. Pursuant to Section II-A-2 of the RFP, the Carriers will pay all costs of System maintenance and management directly to the Selected Vendor.

Question 22. *Section II A Item 8 seemingly omits the Carriers from the decision making process as it related to capital upgrades. Is this the intent? Considering the Carriers will be paying for the cost of the System Installation and all costs of System upgrades, it seems logical that they be given approval authority regarding whether a capital upgrade is necessary and the cost of said upgrade. [Nextel]*

Answer 22. It is not the Authority's intent to omit the Carriers from the decision-making process regarding capital upgrades. As stated in Section II-A-8 of the RFP, the Carrier Lease Agreement shall provide a procedure for capital upgrades to the System.

Question 23. *Rather than have Carriers prepay for System upgrades, would the Authority consider a method by which Carriers pay the cost of the upgrades incrementally based on the Vendor's completion of stated milestones? [Nextel]*

Answer 23. As set forth in Section II-A-8 of the RFP, the Carriers shall prepay all costs of System upgrades into the System Escrow Account and will replenish the account as necessary.

Question 24. *Section II A Item 8 references a Vendor fee. Is this in addition to the annual fee for maintenance and repairs and the reimbursement referred in Section II A Item 2? [Nextel]*

Answer 24. The Vendor fee referenced in Section II-A-8 of the RFP refers to a fee that will be due to the Vendor in connection with any capital upgrades to the System. While the Authority anticipates that such fee will be calculated at the same 10% rate referenced in Section II-A-2, the base will be different (i.e., the cost of the capital upgrade).

Proprietary Equipment Premises

Question 25. *The proposed 10 x 10 Proprietary Equipment Premises does not meet many carrier space requirements. Is additional room available without increasing the lease rate? [Sprint]*

Answer 25. No. Carriers requiring more than the 10' x 10' square feet of equipment space included in base rent will be able to lease additional space based on square footage at a rate to be determined by the Authority.

Question 26. *If a Carrier does not use its allotted 10' x 10' s.f. of equipment space, as provided for in Section II A Item 11, will its base rent be reduced? [Nextel]*

Answer 26. No. See RFP, section II-A-11.

Question 27. *If a Carrier needs more than the allotted 10' x 10' s.f. of equipment space, as provided for in Section II A Item 11, will the additional base rent be based on square footage, a flat fee or some other metric? [Nextel]*

Answer 27. Carriers requiring more than the 10' x 10' square feet of equipment space included in base rent will be able to lease additional space based on square footage at a rate to be determined by the Authority.

RFP Process, Extension

Question 28. *How many carriers need to indicate willingness to participate by signing carrier agreements, in order for the MTA to proceed with the project? [Sprint]*

Answer 28. Commencement of construction is not contingent upon how many Carriers are willing to sign Carrier Agreements, but rather the willingness of interested Carriers to prepay into escrow the full amount of System construction and installation costs, regardless of the actual number of Carriers that elect to lease space on the System.

Question 29. *Will the Authority allow for an extension of the March 6 date for Carrier Submissions? Say March 28? [Sprint]*

Answer 29. The Authority has agreed to extend the deadline for Carrier submissions to March 21, 2003.

Question 30. Pursuant to Section II A Item 7, a Carrier's Fee Deposit is not refundable if the Authority decides not to sign Carrier Lease Agreements with Carriers willing to fund into escrow the aggregate System construction costs. For what reasons would the Authority not sign Carrier Lease Agreements with Carriers willing to fund into escrow the aggregate System construction costs? [Nextel]

Answer 30. This question appears to misinterpret Section II-A-7 of the RFP, which provides for the termination of the Carrier Lease Agreements in the event that the Authority is unable to sign Carrier Lease Agreements with Carriers willing to fund the aggregate System construction costs, not in the event that the Authority decides not to sign agreements with willing Carriers.

Question 31. What is the likelihood that the Carrier submission date of March 6, 2003 will be postponed? [Nextel]

Answer 31. The Authority has agreed to extend the deadline for Carrier submissions to March 21, 2003.

Question 32. Section III B Item 2 (c) allows for no more than five pages in length exclusive of the Financial Proposal Form. Section III C Item 3 (c), however, requires that each submission include a Form 10K for each of the last two fiscal years. Each Form 10K is in excess of one-hundred pages. Consequently, each Form 10K will exceed the page limitation. How should these provisions be reconciled? [Nextel]

Answer 32. As set forth in the RFP, Carriers' submissions in response to Section III-C-3 must not exceed five (5) pages, exclusive of the Financial Proposal Form. Carriers may also exclude from this five-page total any required appendices, including each Form 10K submitted to the SEC for the last two years, if applicable.

Question 33. Are the page limitations set forth under Section III B Item 2 merely guidelines? [Nextel]

Answer 33. Carrier submissions must not exceed the maximum page limits established for each component. See also Section V-A-4 of the RFP.

Question 34. Would a Carrier's Annual Report fulfill the requirements of Section III C Item 2 (a) ii? If so, can the page limitations under Section III B Item 2 (b) be revised because Annual Reports are generally several pages in length? [Nextel]

Answer 34. The Authority strongly encourages Carriers to submit the information requested in a clear, concise format that adheres to the page limits set forth in the Section III-B-2 of the RFP. See also Section V-A-4 of the RFP.

Question 35. Section III C Item 2 (a) vi requests a statement of the number of channels (or frequencies) in the US currently occupied by the Carrier and/or its affiliates. The number of channels a Carrier occupies varies significantly from market to market. Is it acceptable to limit this information to channels (or frequencies) in the Commonwealth of Massachusetts that are currently occupied by the Carrier and/or its affiliates? If not, because the documentation required to respond to this provision will consist of multiple pages, will the page limitation referenced in Section III B Item 2 (b) be increased or eliminated? [Nextel]

Answer 35. In the event that additional pages are necessary to provide a complete statement of the number of channels or frequencies in the U.S. occupied by the Carrier and/or its affiliates, the Authority will waive the page limit set forth in Section III-B-2(b).

Question 36. *Section III C Item 2 (a) vii requests a list of all FCC licenses held by the Carrier and/or its affiliates. Some Carrier's licenses vary from market to market. Is it acceptable to limit this information to those licenses necessary to provide service to the Commonwealth of Massachusetts? If not, considering the documentation required to respond to this provision will consist of multiple pages, will the page limitation referenced in Section III B Item 2 (b) be increased or eliminated? [Nextel]*

Answer 36. In the event that additional pages are necessary to provide a complete list of all FCC licenses held by the Carrier and/or its affiliates, the Authority will waive the page limit set forth in Section III-B-2(b).

Question 37. *Section III C Item 2 (a) iii requests a summary of the Carrier's regional business plan. How does the Authority define region? [Nextel]*

Answer 37. The Authority considers the northeast quadrant of the country to be the relevant region for purposes of Section III-C-2.

Question 38. *Each Carrier maintains thousands of lease agreements. Can the scope of Section III C Item 2 (b) v be limited to defaults that remained uncured after the expiration of the applicable cure period? [Nextel]*

Answer 38. Yes. Carriers may limit their response to Section III-C-2(b) to those lease defaults that remain uncured after the expiration of the applicable cure period.

Question 39. *Does the attached Secretary's Certificate meet the requirements of Section III C Item 3 (d) I/Corporate Resolution? [Nextel]*

Answer 39. See RFP Section III-C-4(d) regarding the required content of the corporate resolution.

Question 40. *Section III D states that in addition to the \$100,000 Fee Deposit each Carrier is responsible for the Authority's legal or other fees directly attributable to negotiations with that Carrier. Will these additional costs be capped at a certain amount and, further, will the Carrier be invoiced directly so that it has an opportunity to audit said invoices and dispute unreasonable charges? [Nextel]*

Answer 40. Section III-D provides that the Fee Deposit may need to be supplemented at the execution of the Carrier Lease Agreement to cover additional costs incurred by the Authority in connection with negotiations with a particular Carrier. The Authority envisions that the Carriers will receive notice of any draw on the Fee Deposit following lease execution, with reasonable supporting documentation. There will not be a cap on these costs.

Question 41. *Under Section IV A Item 3, will a Carrier that the Authority deems to have failed to submit specified forms and/or requirements be given an opportunity to cure rather than be rejected outright? [Nextel]*

Answer 41. See Section III-A and Section V-A-4 of the RFP.

Question 42. *Will the Carriers be given an opportunity to comment on the proposed Vendor Lease Agreement prior to its execution? [Nextel]*

Answer 42. No; however, the salient terms of the Vendor Lease Agreement are set forth in Section III of the July 10, 2002 Vendor RFP, which is available from the Authority upon written request.

CA/T Project Status, Timeline

Question 43. *What are the projected completions dates (on air ready dates) for each phase of deployment? [Sprint]*

Answer 43. Although such date may be subject to change, at this time, the Authority anticipates that System construction will commence in March 2004. Maverick/Mikom has proposed the following schedule for each phase of deployment:

Phase I:	On Air approximately 6 months from start date.
Phase II:	On Air approximately 7-1/2 months from start date.
Phase III:	On Air approximately 9 months from start date.

Question 44. *Can the MTA provide updated timelines for phased openings II and III? This information will be critical to estimate cash flow (part of the required RFP response) and carrier capital expenditure dates. [Cingular]*

Answer 44. Phase II (I-93 Northbound) is expected to open to general traffic by the end of March, 2003. Phase III (Interstate 93 Southbound) is expected to initially open to general traffic between December, 2003 and March, 2004 with full opening expected between November, 2004 and February, 2005.

Proposed System Design

Question 45. *The RFP refers to the System Installation; what exactly does the System Installation consist of and what is the Vendor's scope of work? What will be required of the Carriers to tie into the System? [Nextel]*

Answer 45. Appendix C of the RFP provides a description of the System that the Selected Vendor plans to install, according to plans that will be produced pursuant to the Vendor Lease Agreement. The Authority believes that this information is sufficient to enable the Carriers to make a determination as to whether they are able to tie into the System.

Question 46. *Pursuant to Section II A 16, Carriers cannot interfere with "CA/T Project construction and completion activities, or with CA/T Project Radio frequencies." What does this specifically include? Does this include interference with the frequencies of other Carriers? [Nextel]*

Answer 46. This section refers to interference with CA/T Project construction activities and CA/T Project radio frequencies, as described in detail within Appendix B to the RFP.

Question 47. Are detailed engineering drawings available of the proposed Midas system installation from Maverick and/or Mikom. [Cingular]

Answer 47. Appendix C of the RFP provides a description of the System that the Selected Vendor plans to install, according to plans that will be produced pursuant to the Vendor Lease Agreement. The Authority believes that this information is sufficient to enable the Carriers to make a determination as to whether they are able to tie into the System. Once the Carrier Agreements have been signed, the Carriers will be provided with additional System information as it becomes available.

Question 48. Has the Midas system design been changed to reflect current market technologies for each carrier? Example would be Cingular and AT&T migration to GSM from TDMA. [Cingular]

Answer 48. Based on the Selected Vendor's response, the proposed MIDAS system for the Central Artery / Tunnel Project has been designed with the following capacity at each Remote Unit:

- Trunking – 32 analog or iDEN channels
- Cellular – 32 channels (CDMA, TDMA, or combination of both)
- CS – 32 CDMA carriers and 24 TDMA/GSM channels

Question 49. Are the two base channels required to be common across all Midas boxes and if so, what are the procedures for changing? [Cingular]

Answer 49. See Answer 16, above. In addition, as set forth in Section II-A-4 of the RFP, while as part of base rent, each Carrier will receive two channels for its own use on the System, each Carrier may also specify the number of additional frequencies on the System that it wishes to use or reserve for its use.

Question 50. Are there projected daily traffic counts available for the various sections of tunnel components? [Cingular]

Answer 50. Projected daily traffic counts are not available at this time but will be provided if and to the extent they become available.

Additional Carriers

Question 51. What penalties will apply to carriers who do not respond on 3/6/03 and wishing to delay deployment until some time in the future, say 2004 when the Artery project is complete? [Sprint]

Answer 51. Although Carriers who do not submit responses to the RFP will not be penalized, the Authority advises all prospective Carriers that participating at this time is the only guarantee of availability of space on the System at the price and terms set forth in the RFP. The Authority anticipates that Carriers seeking to connect to the System in the future will incur substantial additional costs, which the Authority is not in a position to quantify at this time. Moreover, any Carrier that fails to respond to the RFP is not assured of full accommodation on the System at a later date. See RFP, Section II-A-10.

Question 52. *Under Section II A Item 10, will each Carrier be reimbursed its pro-rata share of the System Installation Costs at the time an additional Carrier executes a Carrier Lease Agreement?*
[Nextel]

Answer 52. See RFP, Section II-A-10.
Answers to Carrier RFP Questions (2).DOC

EXHIBIT A

II. OPERATION COSTS

Year	1 2003	2 2004	3 2005	4 2006	5 2007	6 2008	7 2009	8 2010	9 2011	10 2012
Total Maintenance and Repair Costs	\$717,000	\$717,000		\$795,000	\$795,000	\$845,000	\$970,000	\$970,000	\$995,000	\$995,000
Equipment	\$175,000	\$175,000	\$175,000	\$175,000	\$175,000	\$225,000	\$225,000	\$225,000	\$250,000	\$250,000
Labor	\$542,000	\$542,000	\$542,000	\$620,000	\$620,000	\$620,000	\$745,000	\$745,000	\$745,000	\$745,000
Total Utility Costs	\$216,000	\$216,000	\$216,000	\$216,000	\$216,000	\$216,000	\$216,000	\$216,000	\$216,000	\$216,000
Total Future Capital Upgrades	\$0	\$0	\$1,830,000	\$0	\$0	\$1,830,000	\$0	\$0	\$0	\$0
Equipment	\$0	\$0	\$1,550,000	\$0	\$0	\$1,550,000	\$0	\$0	\$0	\$0
Labor	\$0	\$0	\$280,000	\$0	\$0	\$280,000	\$0	\$0	\$0	\$0

- Please state any additional assumptions in the area provided below:
- 1). Includes reconfiguration of the System by carrier request up to 3 times a year
 - 2). Includes on site equipment vendor technical support 3). On-going training for service employees by equipment provider 4). Attic / replacement stock purchased annually for the system 5). Excludes all governmental access fees that may be imposed 6). Utility costs include a ten year agreement for two (2) redundant 432 F backbones as described of which the construction cost is amortized over a ten year period 7). 2005 future upgrade includes a 3rd remote at 40 locations
 - 8). 2008 future upgrades include adding a 4th remote at 40 locations. Note: The dark fiber lease in note 6, can be reduced if the construction cost is not amortized, but funded by the carriers.